

DOCUMENT RESUME

ED 399 641

EA 027 887

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TITLE How Different, How Similar? Comparing Key Organizational Qualities of American Public and Private Secondary Schools. Statistical Analysis Report.
INSTITUTION American Institutes for Research in the Behavioral Sciences, Washington, D.C.
SPONS AGENCY National Center for Education Statistics (ED), Washington, DC.
REPORT NO NCES-96-322
PUB DATE Oct 96
NOTE 91p.
PUB TYPE Statistical Data (110) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Administrator Qualifications; Educational Objectives; Institutional Autonomy; Private Education; *Private Schools; Public Education; *Public Schools; School Based Management; *School Organization; School Personnel; Secondary Education; Tables (Data); Teacher Salaries

ABSTRACT

Although differences in the organization of public and private schools are a focus of school reform discussions, those differences are not well understood. Using data from a national sample of secondary schools in the 1990-91 Schools and Staffing Survey, conducted by the National Center for Education Statistics (NCES), this report examined organizational differences across public and private schools and among private school types. The study examines six key organizational domains: educational goals; the professionalization of principals; teacher compensation; size of administrative staff; school-based control; and curricular emphasis. Overall, the results show considerable organizational variation among different types of private schools and some significant similarities between public schools and some types of private schools. Although religious development of students is the most important goal among many private schools, comparable proportions of public, Catholic, and unaffiliated religious secondary schools hold academic excellence as their main educational goal. Although private school principals may hold fewer education credentials than their public school counterparts, there are differences across private school types. The ratio of administrative staff to faculty is larger in the private than public sector; however, there is considerable variation among private school types. Although private schools tend to have more onsite control of key administrative decisions, not all public schools lack this feature. There are few substantial sector differences in graduation requirements. Finally, after controlling for many other school characteristics, information about sector membership and private school type greatly increased prediction of a school's teacher salaries, but only modestly improved prediction of administrative staff size and the degree to which the principal is a key decision maker. In summary, school sector is not a simple organizational fault line running through the nation's schools. Eight tables and 11 figures are included. Appendices contain additional information about educational goals; details of the multiple regression analysis; tables of standard errors; a formula used in calculations; and technical notes. (Contains 45 references.) (LMI)

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How Different, How Similar?

Comparing Key Organizational Qualities of American Public and Private Secondary Schools

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NCES 96-322

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October 1996

Suggested Citation

U.S. Department of Education. National Center for Education Statistics. *How Different, How Similar? Comparing Key Organizational Qualities of American Public and Private Secondary Schools*, NCES 96-322, by David Baker, Mei Han, Charles T. Keil. Project Officer, Stephen P. Broughman. Washington, DC: 1996.

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ACKNOWLEDGMENTS

The authors wish to thank all those who contributed to the production of this report. Among American Institutes for Research staff, special mention goes to Don McLaughlin for advice and review; to Min Yuan and Rima Ravi for standard error generation; to Shannon Daugherty, Stephanie Fulcher, B.J. Horgeshimer, and Susan Mansfield for graphic production and editorial contribution; and to Michael Garet and Marianne Perie for their helpful comments.

We are very grateful to the comments and suggestions of reviewers at NCES: Dan Kasprzyk, Marilyn McMillen, and Frank Johnson of the Surveys and Cooperative Systems Group; Tim Madigan and Thomas Smith of the Data Development and Longitudinal Surveys Group, and outside NCES, Michelle Doyle and Jack Klenk, Office of Non-Public Education; U.S. Department of Education; David Hand, International Christian Accrediting Association; David Kamens, Department of Sociology, Northern Illinois University; and Sister Lourdes Sheehan, Alliance for Catholic Education, University of Notre Dame.

HIGHLIGHTS

Differences in the organization of public and private schools are a focus of school reform discussions. Yet how different or similar public and private schools really are is not well understood. Debates about improving schools often overlook the diversity among private schools, as well as the potential for a high degree of similarity between many public and private schools. Using data from a national sample of secondary schools in the 1990-91 Schools and Staffing Survey, conducted by the National Center for Education Statistics (NCES), this report examines organizational differences across public and private schools and among private school types.

- Overall, the results show considerable organizational variation among different types of private schools and some significant similarities between public schools and some types of private schools. For instance, compared to other private schools, Catholic schools often have more similarities with public schools. School sector is not a simple organizational fault line running through the nation's schools.
- Although religious development of students is the most important goal among many private schools, comparable proportions of public, Catholic, and unaffiliated religious secondary schools hold academic excellence as their main educational goal.
- Although private school principals may hold fewer education credentials than their public school counterparts, there are differences across private school types. Principals of all three types of Catholic secondary schools earned education credentials similar to those found among public school principals.
- Teacher salary schedules are lower in the private sector across school types, but there is a wider range among private schools than public schools.
- The size of the administrative staff within the school relative to the size of the school's faculty is larger in the private sector than in the public sector. However, there is considerable variation among private school types; for example, Catholic parochial, diocesan, and unaffiliated religious secondary schools have school based administration similar in size to public schools.
- Although private schools tend to have more on-site control of key administrative decisions about teacher hiring, curriculum, and student discipline policies, not all public schools lack this feature. There are some differences in degree of administrative control among types of private schools as well.

- There are few substantial sector differences in graduation requirements.
- After controlling for many other school characteristics such as size, location, and student body composition, information about sector membership and private school type greatly increased prediction of a school's teacher salaries, but only modestly improved prediction of administrative staff size and the degree to which the principal is a key decisionmaker.

INTRODUCTION

This report examines selected organizational characteristics of American public and private secondary schools from the 1990-91 Schools and Staffing Survey,¹ conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). The analysis builds upon earlier NCES reports on the organizational nature of private schools, such as *Private Schools in the United States: A Statistical Profile with Comparisons to Public Schools* (Benson and McMillen 1991) and most recently, *Private Schools in the United States: A Statistical Profile, 1990-91* (McLaughlin, O'Donnell, and Ries 1995).

This report compares similarities and differences in the organization of secondary schools across the private and public sectors and within the private sector. Six key organizational domains of schools are chosen for this comparison:

- Educational Goals
- Professionalization of Principals
- Teacher Compensation
- Size of Administrative Staff
- School-based Control
- Curricular Emphasis

The first part of this report provides the policy context from which to consider organizational differences across sectors; the questions that guide the analysis and a brief description of the six organizational domains are also examined in this section. The second part describes the specific parts of the Schools and Staffing Survey used. The third part of the report presents two sets of results: the first are descriptive analyses of a sector comparison of each of the six organizational domains; the second are analyses that compare influence of sector membership on several organizational domains after other school characteristics are accounted for.

Policy Context

The last 15 years of research comparing private and public schooling has had an unprecedented influence on the public discourse about education. Information comparing how private and public schools are organized and governed, as well as information comparing their relative academic effectiveness, is now commonly used in discussions about how to improve education worldwide (e.g., James 1987). Recently, for example, several specific policy recommendations among the current restructuring reforms in American public schools stem from research on private schooling. Similarly, the debate over school choice and chartering is an outgrowth of analyses of private schools and their presumed ability to serve clients with a more adaptive organization than public schools (e.g., Chubb and Moe 1990; Boyd and Walberg 1990; Alves and Willie 1987; Cookson and Lucks 1995; Hannaway and Abramowitz 1985). Related to this

¹ The sample used in this report included 4,623 schools offering classes to at least one of senior secondary grades 10, 11, or 12. Seventy-four percent of these are secondary schools, and 26 percent are combined schools. The term "secondary school" is used throughout this report.

are recent experiments with privatization of local public schooling (e.g., the Boston, Cambridge, and Baltimore projects). A common theme in all these policy discussions is that private schools offer an effective model that might be transferred to public schools to improve many aspects of the educational program (Ballou and Podgursky 1995).

Because research comparing private and public schooling has contributed so much to recent, central policy discussions about improving public schools, a perception may have emerged from this literature that the private sector is *different* from the public sector and that it is organizationally exceptional throughout. In other words, many believe that all private schools are similar, that they all differ from public schools, and that they all exhibit the organizational characteristics that are associated with effective schools. This overly simple perception can be reinforced by the tendency of debates over quality education to use an imagery of the American "private school" as a generic organization, even though the originating research examined only one part of the private sector.

For example, starting with reports in the early 1980s, some school-effects researchers have argued that private schools are better at educating children, particularly disadvantaged minority students, than their public counterparts. But this research has been based solely on the Catholic sub-sector of private schools, and even then has not compared different types of Catholic schools such as private order versus diocesan schools (e.g., Chubb and Moe 1990; Coleman, Hoffer, and Kilgore 1982; Greeley 1982; James and Levine 1988 V2; Jencks 1985; Bryk, Lee, and Holland 1993). The earliest findings from Catholic schools started a trend that linked subsequent public and private school comparisons to reform questions. The initial idea behind this is perhaps best summarized in a question asked by school-effects researcher, Andrew Greeley, in his concluding remarks about the first wave of public and private school-effects reports in 1982:

Is it just possible that there might be something going on in the classrooms of Catholic schools from which other educational institutions in the country might learn?
(Greeley 1982, p. 111)

Over time, distinctions about what was being compared in the original research on Catholic and public schools have perhaps been replaced by a general image of more gross private and public differences. Further, the research focuses on central tendencies in considering effectiveness and organizational differences between some types of private schools and public schools.

Far less attention has been paid to understanding the degree to which the distribution of qualities overlap across the private and public sectors. For example, policy debates rarely consider how much the public sector overlaps with the private sector on key organizational features that may be responsible for differences in educational quality. Consider Chubb and Moe's summary statement about their 1990 discussion of private and public school comparisons:

Because private schools are disproportionately likely to enjoy autonomy, to be organized effectively, and to post large achievement gains.... the relationships we observe between autonomy and organization and between organization and achievement might possibly represent a "**private school effect**" and may not hold among schools in the public sector. We would be surprised if this proved to be the case.... Still, our empirical analysis leaves

open the possibility that **our results have more to do with differences between public and private schools than with differences among public schools** (Chubb and Moe 1990, pps. 259-60, emphases added).

As the last statement indicates, public and private school comparisons often preclude considering the consequences of a large overlap between the sectors on the organizational factors that these researchers suggest are effective.

Reliance on a generalized notion of the American private school ignores the considerable potential for organizational and quality diversity present in the private sector (Cooper 1988; McMillen and Benson 1991; McLaughlin, O'Donnell, and Ries 1995). Simple perspectives can unintentionally gloss over organizational differences among private schools and can lead one to overlook the actual nature of organizational diversity among the nation's schools.

Given the central role that the "private school compared with the public school" now plays in many policy debates about American education, it is important that the public and policymakers alike appreciate both the range of organizational diversity among private schools and the degree to which the schools in each sector overlap in crucial organizational factors that have been shown to be associated with a school's quality as an educational institution.

Analysis Questions

Recent landmark comparisons of private and public school effects on student outcomes have come from analyses of data collected by NCES, such as *High School & Beyond* (e.g., Coleman, Hoffer, and Kilgore 1982; James and Levine 1988). These data were designed to examine the academic progress of students and accordingly provided some answers about which students do well. However, these data do not provide much information on the organizational characteristics of schools across the wide landscape of American education. NCES' *Schools and Staffing Survey* was designed to collect more organizational information about schools.

To provide a closer look at the organization of American secondary schools, the analyses in this report addresses two questions:

- First, is the private secondary school sector uniformly different from the public secondary school sector across key organizational domains? How much overlap exists between the public and private sectors across these domains? And how much organizational variation exists within the private sector?
- Second, to what extent does sector membership predict key organizational characteristics of a school after controlling for other school characteristics, such as the types of students, community, school size, and so forth?

The first set of questions asks about the extent of organizational diversity among private schools and the degree to which the public and private sectors overlap on important organizational qualities. As the recent NCES statistical profile of private schools illustrates, there is considerable diversity among private schools (McLaughlin, O'Donnell, and Ries 1995). The

analysis here uses this idea as a starting point from which to examine further organizational diversity and overlap among the nation's schools. It could be, for example, that for a particular organizational feature, a small proportion of private schools are set off from the rest of their sector, and a much larger group of private schools are relatively similar to schools in the public sector. Or it could be that most private schools differ from most public schools on important organizational features.

The second question asks to what extent sector membership is associated with these key organizational qualities after controlling for other school characteristics such as the school's size, the type of community it serves, the nature of the student body, and so forth. Like other types of organizations, schools are shaped through a set of factors present in their social and political environments (Hannan and Carroll 1992; Meyer and Rowan 1977). Whether a school is in the public or private sector and the specific sponsorship of private schools (i.e., private school types such as Catholic, conservative Christian, nonsectarian) are two such factors among many important forces that shape the specific organization of a school. These analyses will compare the strength of sector membership relative to other factors in predicting six selected key organizational features of schools.

Why These Six Organizational Domains?

All schools are similar in superficial ways. Organizational researchers show a homogenizing of basic school structure even across sectors in the United States and other countries over the past century (Baker 1992; Ramirez and Ventresca 1992; Jepperson 1991). Things like age-graded class structure and basic core academic curricular areas are part of the "surface" organization of most schools (e.g., Benavot et al. 1991). Underneath the surface, however, are organizational domains that vary across schools and have been discussed as reasons why schools may function differently (e.g., Talbert 1988).

Indicators of six organizational domains are examined here: the school's main educational goals; the professionalization of its principal; the compensation of its teachers; the size of administrative staff within the school; which decisionmakers have the most influence on crucial educational matters; and the school's curricular emphasis. These organizational domains are related to recent restructuring reforms and are often among the factors cited as important areas of concern in school-effects research (e.g., Chubb and Moe 1990). They are also often the factors that have been used in past research to discuss reasons why school effectiveness may vary across public and private sectors (Talbert 1988).

Although the domains examined here are indicators of a school's central organizational qualities, they are not the only central factors. These six domains, however, represent at least a general picture of the organizational character of the school and thus offer a useful perspective from which to consider differences across and among private and public secondary schools.

Schools and Staffing Survey

This report uses data from the 1990-91 Schools and Staffing Survey (SASS). Conducted by the National Center for Education Statistics (NCES) of the U.S. Department of Education, SASS is the largest and most comprehensive dataset available on the organizational aspects of American schools. It has gathered a wide range of information on the characteristics, work, career plans, and attitudes of administrators and faculty and the characteristics of schools and districts across the country. This information was collected for both private and public schools.

The 1990-91 SASS used a random sample of schools and staff stratified by state, sector, and school level. It is designed to provide national and state-level estimates for public schools and national and association-level estimates for private schools (see technical notes in Appendix E).

Using the *school* as the unit of analysis for this report, measures of organizational domains are based on responses to different questionnaires within SASS: the Teacher Demand and Shortage Questionnaire for Public School Districts, the School Administrator Questionnaire, and the School Questionnaire. Sector analyses are done by comparing public schools with seven sponsorship categories of private schools from the NCES private school typology (McMillen and Benson 1991), consisting of three types of Catholic schools (parochial, diocesan, and private order), three types of other religious-oriented schools (conservative Christian, nationally affiliated, and unaffiliated), and nonsectarian regular schools. Two other small categories of private nonsectarian schools—special education and special emphasis—are excluded in this report because in serving special student populations their organizational features can be radically different from other private schools (McLaughlin, O'Donnell, and Ries 1995). For example, special education schools can combine health care and schooling in one institution.

The definitions of the seven categories of private schools are listed below:

- *Catholic schools* are divided into the governance categories:
 - *parochial*,
 - *diocesan*, and
 - *private order*.
- Non-Catholic religious schools are classified as *Other religious* and are divided into
 - *conservative Christian*, schools with membership in a conservative Christian association;
 - *affiliated* schools that have a formal or recognized association with an established religious group or denomination; and
 - *unaffiliated* religious schools that do not have a formal association with any organized religious group or religious association.
- Regular *nonsectarian* schools are those schools with a regular elementary/secondary program emphasis.

The analyses here are confined only to schools that include at least the senior secondary level (see footnote 1) because most of the research on private schools has been on the secondary school (e.g., Chubb and Moe 1990; James and Levine 1988 V2).

Standard errors indicating the accuracy of estimates are included in Appendix C. All comparisons discussed in the report are tested for statistical significance at the $\alpha = .05$ level, with appropriate Bonferroni adjustments for multiple comparisons.

To put the subsequent results about school sectors and organizational domains in perspective, three things should be kept in mind about the relative size of the public and private sectors (McLaughlin, O'Donnell, and Ries 1995). First, the majority of American students in 10th through 12th grades attend public schools with just about 1 out of 10 students attending some type of a private institution. Second, because private schools are smaller on average than public schools, about 1 out of 4 schools offering 10th through 12th grades in the country is private. Although private schools educate a modest proportion of the nation's total secondary students, they represent a substantial organizational share of all American secondary schools. Third, private schools are sponsored by a diverse set of agencies, most of which are affiliated with religious denominations.

ARE PRIVATE SECONDARY SCHOOLS DIFFERENT FROM PUBLIC SECONDARY SCHOOLS?

Educational Goals

The goals pursued by any organization influence its structure and ultimate functioning. This is a central conclusion from research and theory about organizations as rational social operations (March and Simon 1958; Scott 1981). Although goals and organizational actions are often imperfectly aligned, and disagreements on goals can exist across an organization, goals and actions are inextricable (Cyert and March 1963; March and Olsen 1976; Simon 1964).

This idea is true of schools and their central educational goals. Main educational goals may not influence everything a school does as an organization, but goals clearly have an influence over how schools function (Hannaway 1989; Weick 1976). Within the broad spectrum of formal education, a school can emphasize different goals as an organization, thus shaping the way it functions. Educational goals are ends to which schools strive, thus goals can influence how resources are distributed within the school, which organizational issues school administrators focus on, and numerous day-to-day decisions made by the school's faculty.

In SASS, the principal of each of the sampled schools was asked to choose which of seven educational goals was the most important for their school.² The seven goals are the following:

- building basic literacy skills (reading, math, writing, speaking)
- encouraging academic excellence
- promoting occupational or vocational skills
- promoting good work habits and self-discipline
- promoting personal growth (self-esteem, self-knowledge, and so forth)
- promoting human relations skills
- promoting specific moral values

For principals of private schools, an eighth goal—the fostering of religious or spiritual development—was included.³ Public schools can never hold this goal.

² Principals were also asked to select the second and third most important goals. For these results, see McLaughlin, O'Donnell, and Ries (1995). Also, for a contrast between public and private school teachers' opinions of educational goals, see McMillen (1988).

³ Principals of public schools were asked about the goal of promoting multicultural understanding. However, since private schools were not asked about this goal, it is not included in this analysis since no direct comparisons can be made with private schools.

Table 1 displays the distribution of a school's most important educational goal across sectors. Figure 1 illustrates cross-sector differences by contrasting the results for the three educational goals most frequently chosen by schools: **building basic literacy skills, academic excellence, and religious development of their students.**

Given the wide variety of students within the public sector, it is not surprising that 4 to 5 out of every 10 public school principals rate basic literacy skills as their school's most important organizational goal. At the same time, almost 3 out of 10 public school principals indicate that academic excellence is their school's most important organizational goal.

Religious development of students is the most common central goal of all types of religious private schools.⁴ But at the same time, among all three types of Catholic schools, 3 out of 10 school principals indicate that academic excellence, not religious development, is their schools' most important goal. This proportion is similar to that found among public secondary schools. Of schools examined here, only principals of nonsectarian private schools have a majority of principals responding that academic excellence is the most important goal of their school.

These findings suggest several conclusions about goals of schools in public and private sectors. The simplest sector difference is that public schools are split between a primary goal of basic skills or a primary goal of academic excellence, whereas private schools are split between religious development or academic excellence as the primary goal. Also, the private sector is not uniformly different from the public sector. A substantial proportion of both public and private schools identify academic excellence as the most important educational goal. Although almost half of American private secondary schools rate religious education as the most important goal, there are also sizable numbers of religiously sponsored schools that see academic excellence as their most important educational goal. Further, within the private sector, distinct goal patterns emerge across schools. Catholic and unaffiliated religious schools are more evenly split between having religious development and academic excellence a primary goal than the conservative Christian and affiliated religious schools. The nonsectarian schools show a distinct third pattern in the selection of their most important goal, with over one-half of these schools holding academic excellence as their primary goal.

⁴ Because almost one-half of all private schools hold religious development as their primary goal, it is of interest to consider the second most important goal among these schools. As table A.1 in Appendix A shows, among Catholic schools, academic excellence is the overwhelming second goal; among other religious schools, there is more variation among secondary goals of academic excellence, basic learning skills, and specific moral values.

Table 1— Percentage of public and private secondary school principals reporting the educational goals as the most important, 1990-91

	Basic literacy skills	Academic excellence	Vocational skills	Discipline	Personal growth	Human relations skills	Specific moral values	Religious development
Total public schools	44.7	29.0	2.5	8.0	13.7	1.1	0.7	NA
Total private schools ¹	14.4	23.6	0.0	2.9	6.0	0.5	4.3	48.3
Private school type ¹								
Catholic								
Parochial	12.6	30.1	0.0	0.0	12.0	0.0	2.3	43.1
Diocesan	6.1	31.1	0.0	0.9	8.2	0.0	6.6	47.1
Private order	8.9	33.0	0.0	2.1	15.2	0.0	4.7	36.1
Other Religious								
Conservative Christian	12.7	11.6	0.0	1.4	0.4	0.0	5.6	68.3
Affiliated	15.5	16.3	0.0	2.0	6.2	0.8	1.1	58.1
Unaffiliated	20.3	25.7	0.0	7.9	4.0	0.0	5.7	36.5
Nonsectarian								
Regular	21.2	53.5	0.3	5.0	14.7	3.4	1.9	0.0

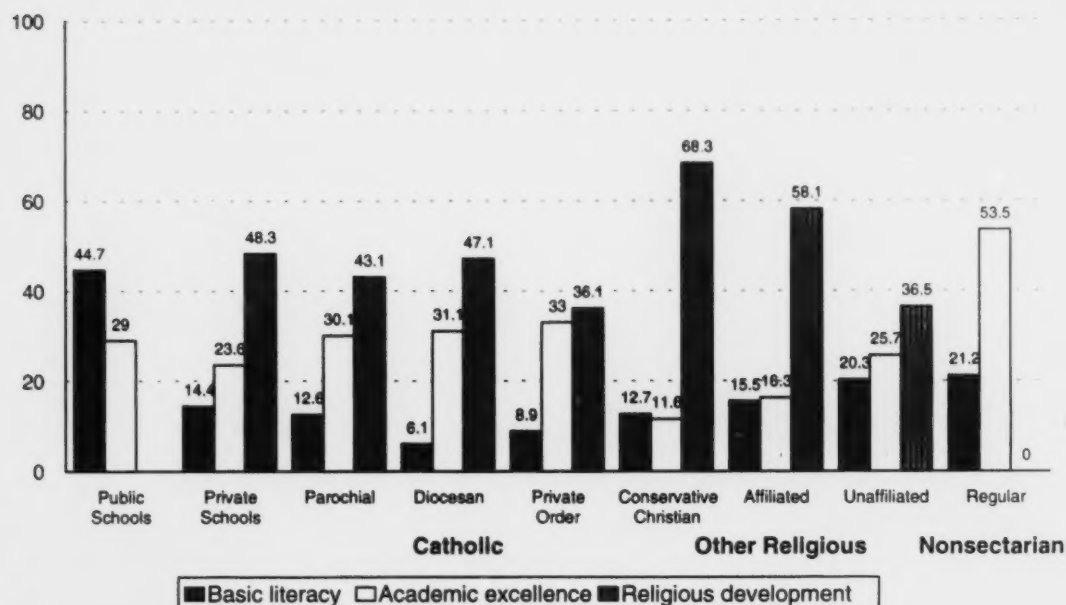
¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

NOTE: Numbers may not add up to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

These sector comparisons are drawn only on the main educational goal of a school. It should be kept in mind that schools can certainly have several important goals. For example, a religious school can have academic excellence as its primary goal, but it can also consider religious socialization as an important goal. The same could be true for the goals of academic excellence and promoting basic academic skills within a public school. Educational goals are not necessarily mutually exclusive; it should also be kept in mind that the primary educational goal of a school can exert more influence over the functioning of the school than secondary goals.

Figure 1. Percentage of public and private secondary school principals reporting selected educational goals as the most important, 1990-91



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Administrator Questionnaire).

Professionalization of Principals

The principal as the school's chief educational leader plays a major role in shaping the nature of the organization. The principal in the American public system is often in a key position to shape the school to local concerns of the faculty, students, and community. For example, principals who take a professional approach to closely manage the instruction in a school may positively influence student academic outcomes (Shoemaker and Fraser 1981). Additionally, the complexity and larger size of secondary school academic programs place greater administrative responsibility upon the role of the principal. Because many private secondary schools are "stand-alone" organizations, this may be even more the case in the private sector (Kane and Mason 1992; McLaughlin, O'Donnell, and Ries 1995).

This report examines two characteristics of school principals that are commonly used to measure the professional development of individuals within a white collar occupation (Freidson 1973). First is the level of formal schooling that principals have attained in terms of their highest educational credential. Second is the degree to which principals participate (i.e., enroll) in on-the-job leadership and professional development training.

In comparing public and private schools, the results observed for principals' educational credentials resemble those reported earlier for educational goals. As shown in table 2 and figures 2-4, if the public sector is compared with the private sector as a whole, there are substantial differences across the sectors. Almost one-third of private school principals have a bachelor's degree or less (only 1.7 percent without a bachelor's degree), while few public school principals have less than a graduate degree. Nearly one-fourth (23 percent) of private school principals have a degree beyond the master's, while almost 40 percent of their public counterparts have advanced graduate degrees.

When comparing the distributions of principals' degrees between public schools and different types of private schools, however, a different conclusion emerges. For all three types of Catholic secondary schools, the credentials earned by principals are similar to those found among public schools. For these private schools, a few principals have only a bachelor's degree or less, over one-half have a master's, and one-third or more have advanced graduate degrees. The principals of non-Catholic schools with a religious orientation tend to have less formal education than principals in either the public system or the rest of the private sector. Principals of non-Catholic schools with a religious orientation also tend to have less teaching experience before becoming a principal.⁵ Regular nonsectarian private school principals' degrees are similar to public and Catholic schools with the exception that about one-tenth have a bachelor's degree or less.

⁵ This is true except for affiliated schools compared to parochial schools.

Are Private Secondary Schools Different from Public Secondary Schools?

Table 2— Percentage of public and private secondary schools with principals' highest educational degrees and mean years of experience, 1990-91

	% Bachelor's degree or less	% Master's degree	Beyond master's and PhD	Mean number of years teaching	Mean number of years as principal
Total public schools	1.9	59.7	38.4	10.3	8.8
Total private schools ¹	33.0 ²	43.5	23.4	7.9	7.8
Private school type ¹					
Catholic					
Parochial	0.0	63.3	36.7	12.5	8.3
Diocesan	4.5	54.8	40.6	12.7	6.7
Private order	2.5	61.6	35.9	13.6	8.0
Other Religious					
Conservative Christian	57.5	29.1	13.4	5.1	6.9
Affiliated	30.0	51.0	19.1	7.3	8.8
Unaffiliated	47.5	30.1	22.4	6.1	7.8
Nonsectarian					
Regular	11.6	57.9	30.5	10.2	10.0

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

² The majority of private school principals have at least a bachelor's degree; only 1.7 percent of them had less than a bachelor's degree.

NOTE: Numbers may not add up to 100 due to rounding.

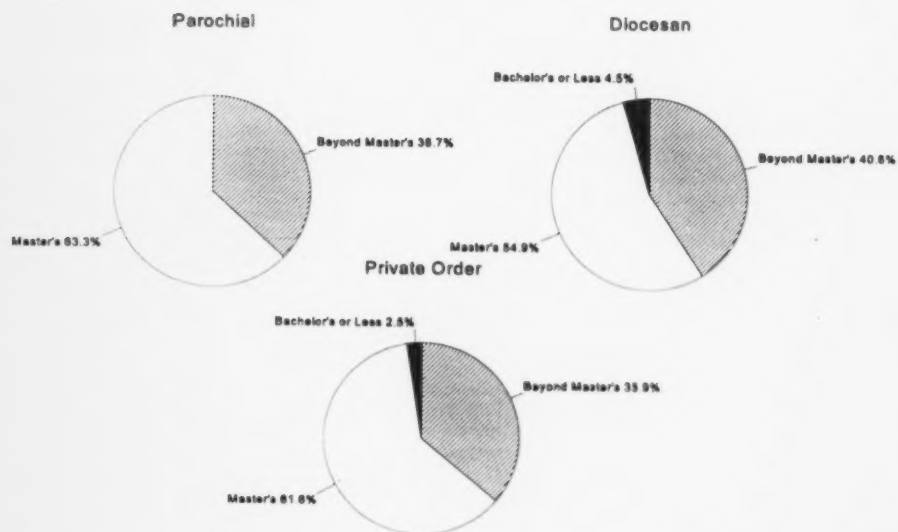
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

Figure 2. Percentage of public and private secondary schools with principals' highest educational level, 1990-91



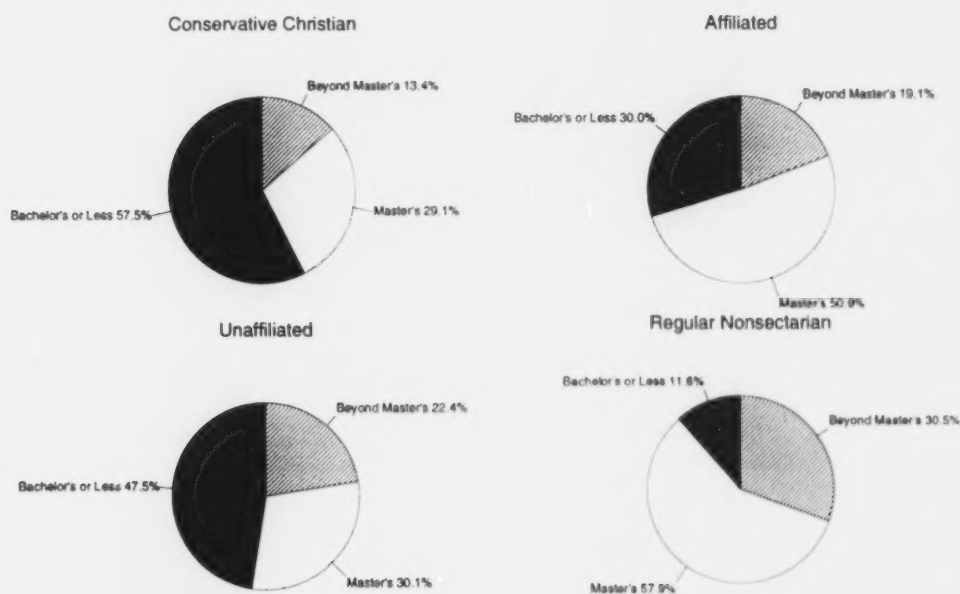
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Administrator Questionnaire).

Figure 3. Percentage of Catholic secondary schools with principals' highest educational level, 1990-91



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Administrator Questionnaire).

Figure 4. Percentage of other religious secondary schools with principals' highest educational level, 1990-91



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Administrator Questionnaire).

Table 3 shows a cross-sector comparison of principal participation in leadership training aside from coursework for a degree. Overall, over 90 percent of public school principals compared to 78 percent of private school principals have received some kind of on-the-job leadership training. Over three times as many private secondary school principals than public school principals have never participated in on-the-job professional training, and more public school principals participate in all types of training than do their private school counterparts. As with educational credentials, participation rates vary across private school types. For example, only one-third of unaffiliated secondary school principals compared to close to two-thirds of diocesan school principals participated in management techniques training.

Table 3— Percentage of public and private secondary schools with principals who received leadership training, 1990-91¹

	Evaluation and supervision	Management techniques	Administrative internship	No training
Total public schools	86.0	73.4	36.9	6.8
Total private schools ²	62.1	53.1	18.3	21.6
Private school type ²				
Catholic				
Parochial	75.1	58.4	16.0	17.8
Diocesan	66.9	63.1	24.5	18.9
Private order	55.0	49.5	36.5	19.3
Other Religious				
Conservative Christian	70.7	61.8	16.0	12.3
Affiliated	59.5	44.8	11.8	29.9
Unaffiliated	45.6	34.0	16.1	38.0
Nonsectarian				
Regular	59.0	58.0	20.5	21.0

¹ Course work for a degree is not included.

² Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

Teacher Compensation

A school's faculty is the largest part of its total workforce, its biggest operational cost, and its single greatest human resource (U.S. Bureau of Census 1993). The kinds of teachers that a school can attract and retain has as much to do with its educational functioning as any other organizational quality. Although many factors contribute to the occupational match between individuals and a particular workplace, research on labor forces has consistently shown compensation in the form of salaries and benefits to be a main factor. All other things equal, higher compensation translates into employees with more education, skill, and motivation (Adams and Rosenbaum 1962). This holds true for the teaching occupation. This conclusion does not discount the importance of other factors that attract teachers to a particular school, such as compatibility with a school's educational approach, workplace conditions, credential requirements, types of students served, religious ideology, geographical location, and availability of positions. Although many factors influence what kinds of teachers schools attract, compensation is certainly a major one.

The Schools and Staffing Survey asked schools to report salary schedules for teachers with different types of education and teaching experience.⁶ These schedules, reflecting average compensation across categories of faculty, are more useful than average salary for comparisons between schools, since actual wages of individual teachers can fluctuate for numerous idiosyncratic reasons. Additionally, schools provided information on whether they offered various employee benefits to teachers.

There are clear and uniform differences between public and private schools in the salary schedules of both new and experienced teachers (see table 4). There are also some substantial differences in salary schedules across private schools. The three types of Catholic secondary schools and regular nonsectarian schools have higher average salaries than conservative Christian and unaffiliated religious schools.

Figure 5 shows the distribution of starting salaries for new teachers with a bachelor's degree for public and private sectors and for types of schools in the private sector. There is a large amount of variation between private schools and public schools. Private school starting salaries range from \$3,000 to \$40,000 with a median of \$13,534, while public school salaries range from about \$12,000 to just over \$35,000 with a median of about \$20,000. There is also considerable variation among private school types. For example, Parochial and diocesan schools have very narrow salary ranges, and 75 percent of starting salary schedules in conservative Christian and unaffiliated religious schools are below \$15,000.

Figure 6 shows that starting salaries offered by private schools are typically lower than public school starting salaries. Only a small proportion of private schools have starting salaries at or above the median public salary of \$20,000.⁷ This finding illustrates a commonly known fact about public and private schools (Chambers 1988, 1996).

Figures 7 and 8 report data on the salaries that schools offer teachers at the highest step of the salary schedules, i.e., teachers with the most experience and training. The patterns described above for starting salaries are evident here. See also McLaughlin, O'Donnell, and Ries (1995) and Chambers (1995) for further cross-sector analyses of teacher salaries.

⁶ Schools without a salary schedule reported the lowest and highest range of base year teacher salaries. These numbers are used for a teacher with a bachelor's degree and the highest possible step on the salary schedule, respectively.

⁷ Also, between 9 to 20 percent of each type of private schools fell in the few thousand dollar range between their third quartile and public school median salary. Almost all conservative Christian schools are below the public school median salary.

Table 4— Mean annual salary from teacher salary schedule at different career stages in public and private secondary schools, 1990-91

	Normal Yearly Base Salary for a Teacher with BA/BS Degree and No Experience ²		Highest Possible Step on the Salary Schedule ³	
	Mean	Difference from the public mean	Mean	Difference from the public mean
Total public schools	20,614	NA	37,953	NA
Total private schools ¹	13,696	-6,918	23,218	-14,735
Private school type ¹				
Catholic				
Parochial	15,647	-4,967	27,225	-10,728
Diocesan	16,853	-3,761	31,536	-6,417
Private order	17,345	-3,269	31,936	-6,017
Other Religious				
Conservative Christian	10,589	-10,025	16,789	-21,164
Affiliated	14,846	-5,768	23,984	-13,969
Unaffiliated	11,882	-8,732	17,668	-20,285
Nonsectarian				
Regular	16,673	-3,941	31,540	-6,413

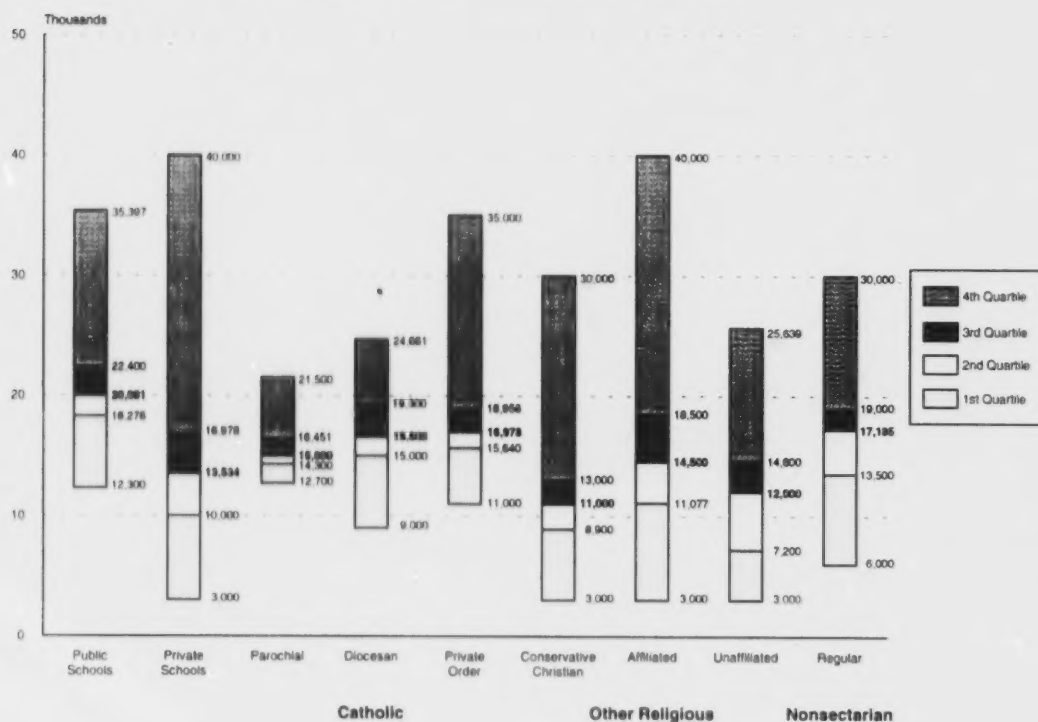
¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

² For schools that do not have a salary schedule, the lowest range of base year teacher salaries was used in the calculation.

³ For schools that do not have a salary schedule, the highest range of base year teacher salaries was used in the calculation.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

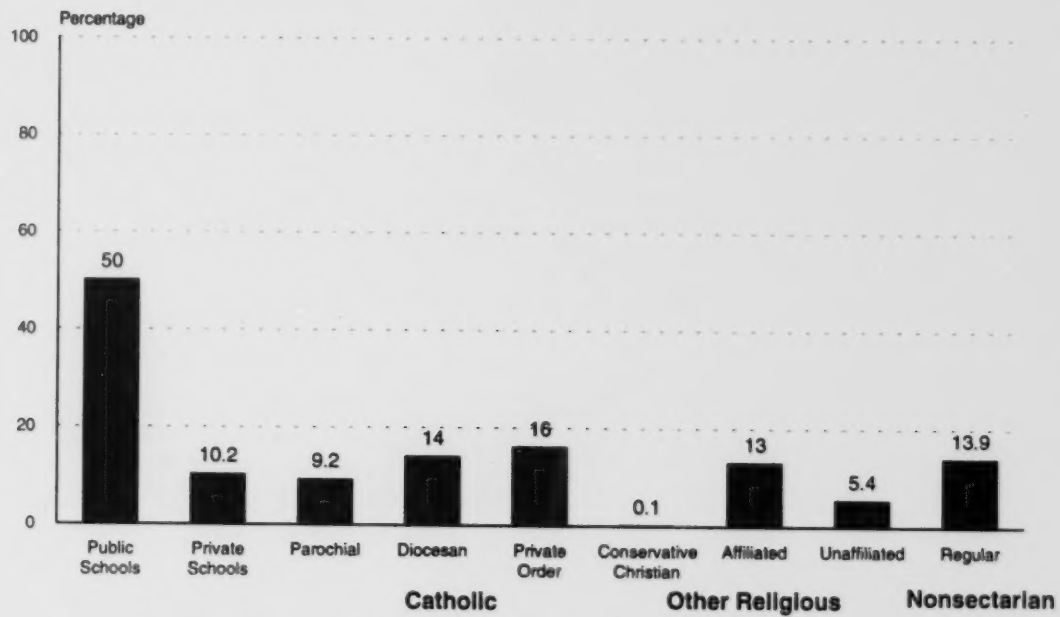
Figure 5. Normal yearly base salary for public and private secondary school teachers with BA/BS degree and no experience, 1990-91 (numbers show quartiles)



NOTE: Median salary is in bold.

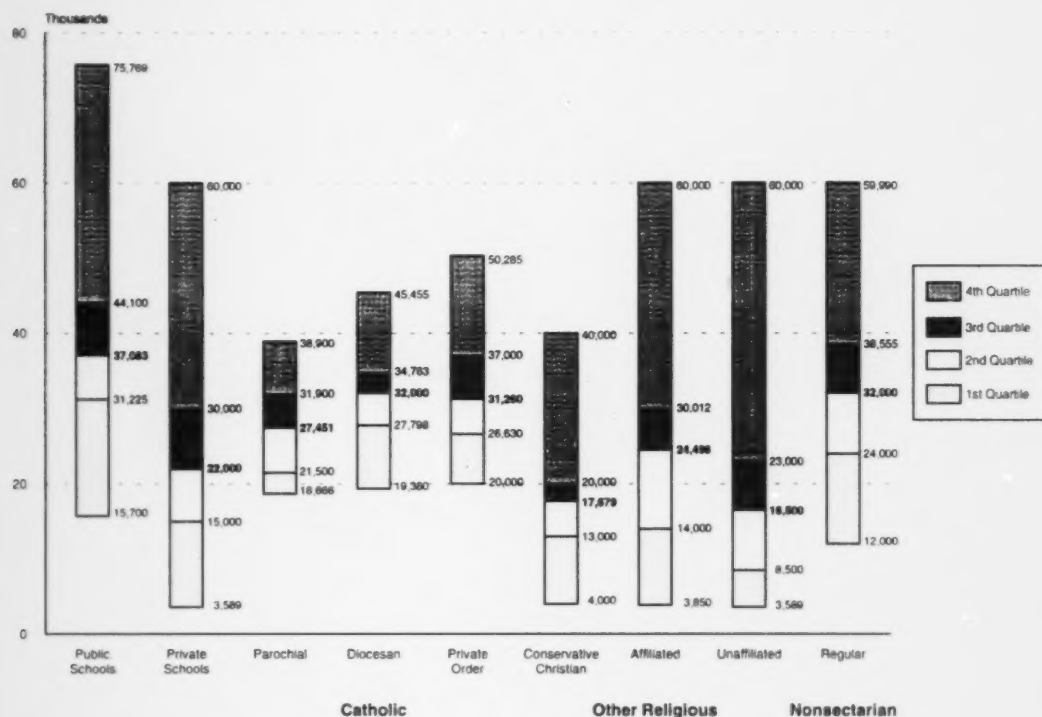
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

Figure 6. Percentage of secondary schools equal to or above the median public school base starting salary (\$20,001), 1990-91



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

Figure 7. Highest step on teacher salary schedule in public and private secondary schools, 1990-91 (numbers show quartiles)

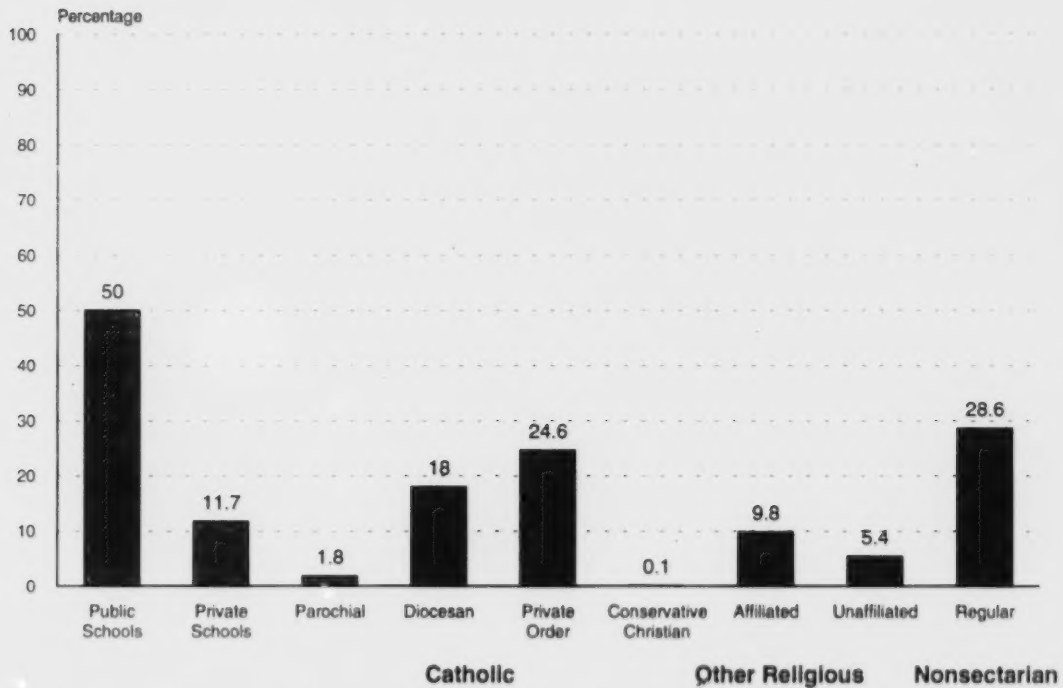


NOTE: Median salary is in bold.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

A description of three main employee benefits (medical insurance, pension contributions, and housing) offered by schools is shown in table 5. Almost all public schools offer medical insurance, while just two-thirds of private schools offer this benefit. Similarly, two-thirds of public schools make contributions to teachers' pensions, but only about 4 out of 10 private schools make such contributions. Although there is a clear difference between public and all private schools across the three benefits, there is considerable overlap between parts of the public and private sectors. Like public secondary schools, almost all schools in each Catholic sub-sector offer medical insurance, and many Catholic schools make pension contributions. Few Catholic schools provide housing as a benefit. But some private schools do provide in-kind compensations such as housing to their teachers, and this may reduce the substantial difference in salaries (McLaughlin, O'Donnell, and Ries 1995).

Figure 8. Percentage of secondary schools equal to or above the median public school highest salary step (\$37,083), 1990-91



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

Are Private Secondary Schools Different from Public Secondary Schools?

Table 5— Percentage of public and private secondary schools providing selected benefits to teachers, 1990-91

	Medical insurance	Pension contributions	Housing
Total public schools	94.8	66.7	2.3
Total private schools ¹	66.7	41.4	12.2
Private school type ¹			
Catholic			
Parochial	100	70.6	5.7
Diocesan	97.5	88.2	1.2
Private order	95.0	69.8	4.1
Other Religious			
Conservative Christian	59.6	13.7	8.3
Affiliated	62.9	51.9	21.6
Unaffiliated	42.7	29.5	19.1
Nonsectarian			
Regular	70.9	61.6	17.5

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

Size of Administrative Staff

One major characteristic of organizations is the size of their administration. All complex organizations require administrative management to operate, but the size and nature of administration can vary greatly across organizations, even when organizations are of equal size. The school restructuring movement often alludes to differences between public and private schools in the size of administration and the nature of administrative control. In this report, sector differences in the size of administrative staffs within schools are examined, and sector differences in administrative control and decentralization are taken up in the following section.

Reported here are administrative staff ratios only within the school itself. Unfortunately, SASS does not provide information about the degree to which various administrative tasks are done outside of the school by staff at the district level for public schools or at supra-administrative units for private schools, such as diocesan offices for Catholic schools. But SASS does provide a detailed account of the size of the on-site administrative staff. To control for differences in the size across schools, we examine administrative staff size relative to the number of teachers in the school.

Table 6 displays the ratio of administrative staff to every 10 instructional staff (teachers) within the school. The administrative staff includes principal(s), assistant principal(s), guidance counselors, vocational counselors, and other professional staff such as curriculum specialists, administrative and business staff, social workers, and health professionals. Also, table 6 shows for comparison the ratio between three types of other personnel (teacher aides, librarians, and counselors) and teachers.

The first column of the table shows a clear sectorial difference with private schools having, on average, 1.3 more administrative staff per 10 teachers than public schools in the school building. But at the same time, interesting differences are found in the relative size of administrations among private school types.⁸ Catholic parochial and diocesan secondary schools have average administrative staff ratios similar to public schools, which could in part be a function of administrative control at the district or diocesan level. Private order Catholic schools, which do

⁸ Since SASS did not ask all types of administrators whether or not they play multiple roles, such as assistant principal and teacher of history, one may wonder if part-time administrators playing several roles is unevenly distributed across sectors and thus a source of bias in the administrative staff/teacher ratios reported in table 6. Additional analyses show that the ratios calculated on just full-time administrators were very similar to those reported in the table: School type (full-time ratio, mean number of full-time admins., mean number of part-time admins.), total public (1.4, 5.3, 1.0), total private (3.0, 3.7, 1.2), Catholic-parochial (1.7, 4.0, 1.9), diocesan (1.5, 5.0, 1.8), priv. order (2.4, 6.7, 1.6), conser. Christian (3.2, 1.7, 1.2), affiliated (2.5, 3.0, 1.4), unaffiliated (3.8, 3.1, 0.08), nonsectarian-regular (2.8, 6.7, 1.2).

not fall under the direct control of diocesan education offices, and some other religious schools (conservative Christian and affiliated religious schools) have higher ratios. The ratios between other types of personnel and teachers vary little either across sectors or among just private schools.⁹

Table 6— Mean ratio of administrator and other staff per 10 teachers in public and private secondary schools, 1990-91¹

	Administrative ² staff/teacher ratio	Teacher aides/ teacher ratio	Librarian and library aides/ teacher ratio	Counselor/ teacher ratio
Total public schools	1.7	1.2	0.4	0.6
Total private schools ³	3.0	1.1	0.4	0.6
Private school type ¹				
Catholic				
Parochial	1.9	0.9	0.6	0.7
Diocesan	1.7	#	0.5	0.6
Private order	2.4	0.1	0.5	0.7
Other Religious				
Conservative Christian	3.6	1.8	0.3	0.8
Affiliated	2.7	0.8	0.4	0.5
Unaffiliated	4.0	1.1	0.4	0.3
Nonsectarian				
Regular	2.4	0.6	0.5	0.5

The entry is < 0.05 but >0.

¹ The number of half-time staff and teachers was divided by 2 and added to the full-time staff and teachers.

² Administrative staff include principal(s), assistant principal(s), guidance counselors, vocational counselors, and other professional staff such as curriculum specialists, administrative and business staff, social workers, and health professionals.

³ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (School Questionnaire).

⁹ One interesting exception is the very small number of teacher aides in Catholic diocesan and private order schools as compared to other private schools.

School-Based Control

Another major component of how a school is organized is the degree to which its on-site administration controls its own major educational decisions about faculty, students, and curriculum. In general, it has been argued that more school-based control and less "outside" control over such decisions produces more flexible and ultimately more effective schools (e.g., Rogers and Chung 1983; Gittell et al., 1972; Malen and Ogawa 1988), although other researchers question the positive effects of decentralization on schools (Cohen 1990). As noted above, public and private school comparisons have contributed to the support for school-based management reforms (e.g., Chubb and Moe 1990; Bryk, Lee, and Holland 1993).

SASS asked school principals to indicate the influence various decisionmakers have on three important educational policies: teacher hiring, student discipline, and establishing the curriculum. Three types of decisionmakers are examined here: two located inside the school—principals and teachers—and one outside the school—the board of education or school board.

Figures 9-11 present a cross-sector comparison of decisionmaking. Principals reported that on all three types of policies, decisionmaking in private secondary schools is dominated by principals. Private school principals are more likely to have a greater influence over establishing the curriculum than public school principals.¹⁰ However, both private and public school principals have a great deal of influence on hiring (93 versus 84 percent) and disciplinary policy (91 versus 88 percent). Teachers in only a few schools in both sectors have a great deal of influence on hiring policies. Over half of schools in both sectors allow teachers to greatly influence disciplinary policy. About two-thirds of private schools have important input from teachers into curricular decisions, compared to just over half of public schools.

School boards have a similar impact on teacher hiring across public and private sectors, but there is variation among private school types. For example, boards of conservative Christian, affiliated, and unaffiliated religious schools are more likely to be important in setting hiring policies than boards of other private schools.¹¹ Public school boards are more likely to have an influence on curricular and disciplinary policies than private school boards. Again, there is variation among private school types. Conservative Christian school boards are more influential than Catholic diocesan, private order, and nonsectarian private schools in setting curricular and discipline policies.

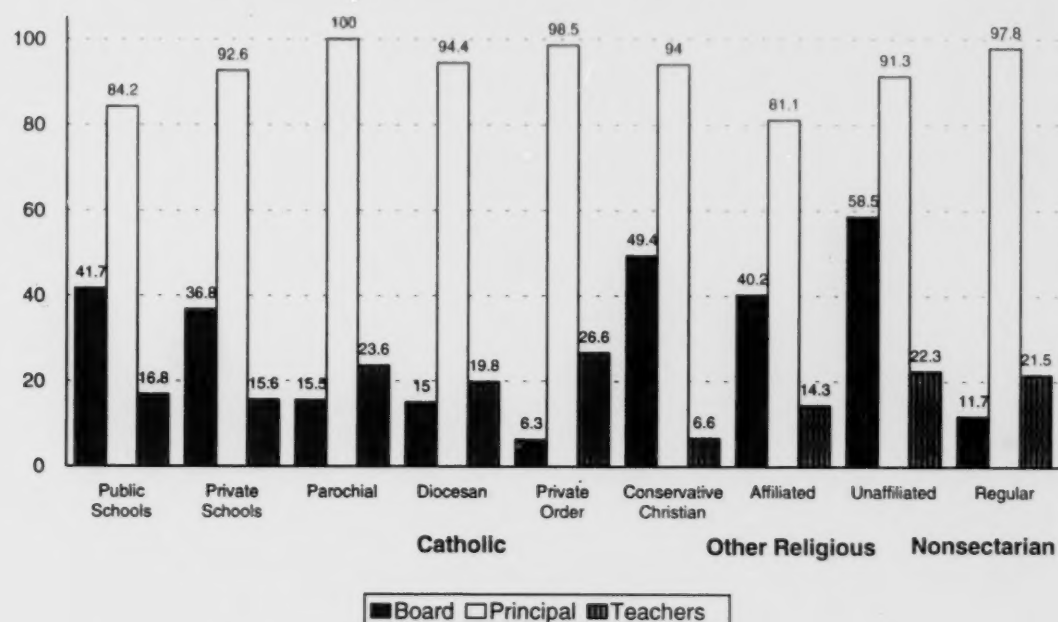
Decisions about organizational policy related to the educational functioning of the school tend to be more influenced by on-site personnel in private schools than in public schools. There are clear differences between the public and private sectors in the governance environment of schools. At the same time, not all types of private schools are alike in the degree to which principals and teachers influence key policies. Further, not all public schools lack a school-based approach to decisionmaking; for hiring and discipline policies, a substantial number of public

¹⁰ Influence is defined as 5 or 6 on a scale of 1 (none) to 6 (a great deal of influence).

¹¹ This is not true in the one case of affiliated compared to parochial schools.

schools have significant input from principals. Curricular policy is less a within-school decision in the public sector than in the private, but even so, half of public schools have major input from either the principal or the faculty.

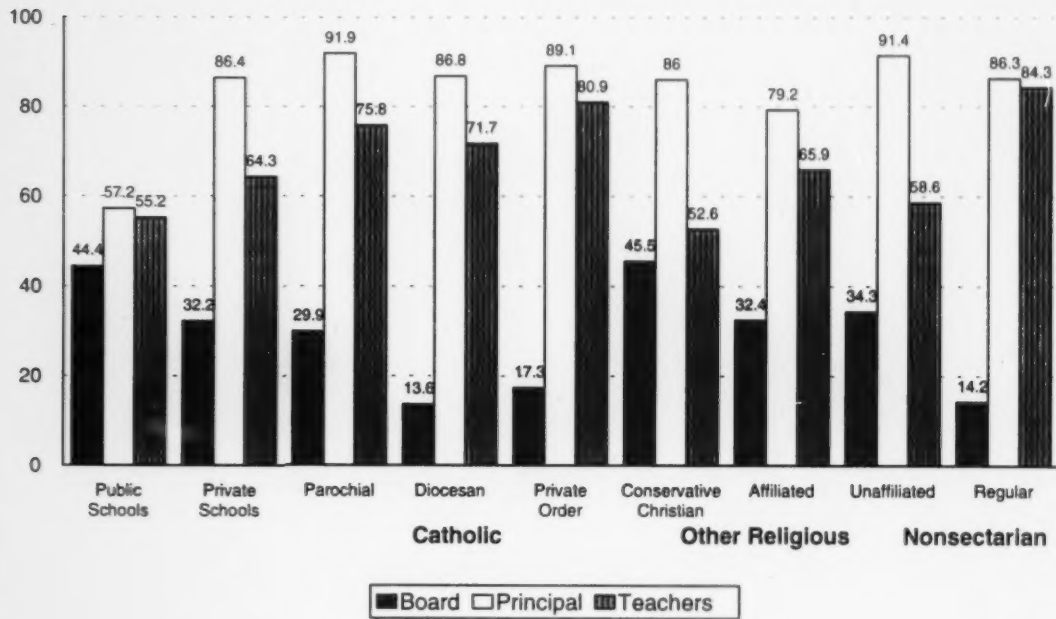
Figure 9. Percentage of public and private secondary school principals reporting a specific group having a great deal of influence over hiring policy, 1990-91



NOTE: Great deal of influence is defined as responses of 5 or 6 on a 1 to 6 scale.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Administrator Questionnaire).

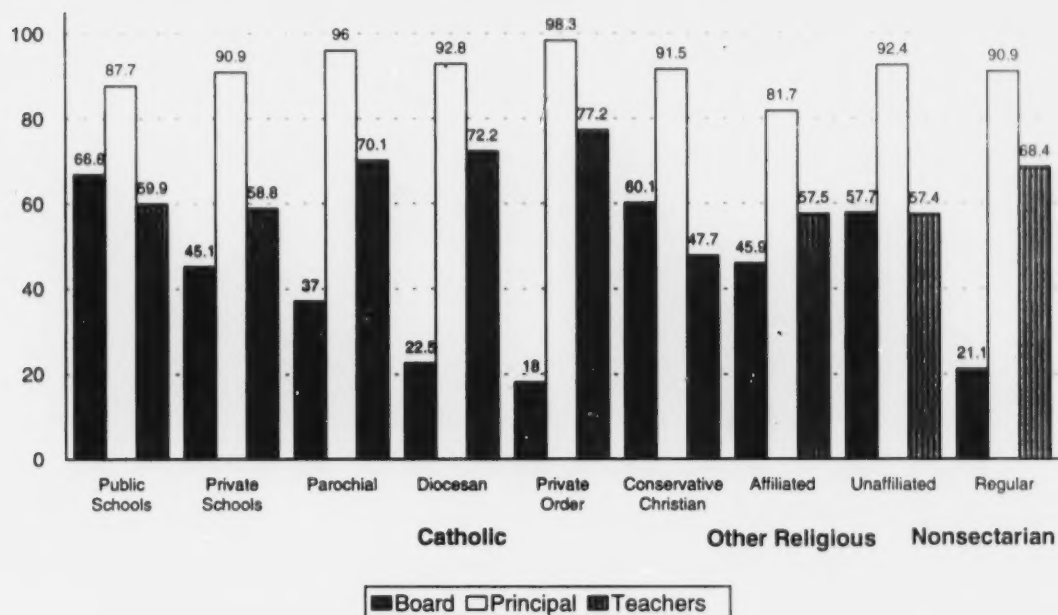
Figure 10. Percentage of public and private secondary school principals reporting a specific group having a great deal of influence over establishing curriculum, 1990-91



NOTE: Great deal of influence is defined as responses of 5 or 6 on a 1 to 6 scale.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Administrator Questionnaire).

Figure 11. Percentage of public and private secondary school principals reporting a specific group having a great deal of influence over disciplinary policy, 1990-91



NOTE: Great deal of influence is defined as responses of 5 or 6 on a 1 to 6 scale.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey, 1990-91 (Administrator Questionnaire).

Curriculum Emphasis

The amount of academic coursework a secondary school requires for graduation is one indicator of the school's general curricular emphasis. As noted above in the section on educational goals, schools in both the public and private sectors can have differing educational emphases. Specific academic requirements that schools maintain can further define the educational organization of the school. The National Commission on Excellence in Education recommended that college-bound students should take 4 years of English; 3 years of social studies, mathematics, and science; one-half year of computer science; and 2 years of foreign language.¹²

¹² These are only nominal requirements and do not include information on the level of curricular content of course, which could vary across sectors.

Table 7 shows that although private schools require more math and science, the differences are small, and in general public and private secondary schools have similar graduation requirements with the exception of foreign language. Although on average private schools require 1 school year more of foreign language instruction than public schools, there is variation among private schools in how much curricular emphasis is given to this subject. Private order Catholic and nonsectarian regular schools on average require 2 years, while parochial Catholic and conservative Christian schools require less than 1 year.

Table 7— Mean years of academic instruction required for graduating in public and private secondary schools, 1990-91

	English	Math	Computer sciences	Social studies	Science	Foreign language
Total public schools	3.8	2.4	0.3	2.9	2.1	0.3
Total private schools ¹	3.8	2.8	0.5	3.1	2.5	1.2
Private school type ¹						
Catholic						
Parochial	3.9	2.6	0.6	3.0	2.3	0.8
Diocesan	4.0	2.7	0.4	3.2	2.4	1.3
Private order	4.0	3.0	0.5	3.0	2.5	2.0
Other Religious						
Conservative Christian	3.7	2.7	0.5	3.1	2.4	0.6
Affiliated	3.9	2.9	0.5	3.3	2.7	1.4
Unaffiliated	3.9	2.9	0.6	3.2	2.6	1.1
Nonsectarian						
Regular	3.9	3.1	0.7	3.1	2.6	2.0

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (School Questionnaire).

WHAT IS THE ASSOCIATION BETWEEN SECTOR AND SCHOOL ORGANIZATION CONTROLLING FOR OTHER SCHOOL CHARACTERISTICS?

Organizational structure is shaped by multiple factors, both internal and external, and this is true for schools as organizations (Scott and Meyer 1988). Along with sector membership, organizational features of schools can be structured by such things as the size of their enrollment, the type of students and families they serve, the type of community they serve, and so forth. As shown above, whether a school is public or private, as well as what kind of private school, can also be associated with some key organizational differences. It is, however, not possible from the descriptive analysis above to see how much of the observed sector differences are due to sector membership after taking into account other determining factors that happen to vary by sector. For example, private secondary schools on average enroll fewer students than public schools, and an organizational domain may be related to enrollment size as well as which sector a school is in (McLaughlin, O'Donnell, and Ries 1995).¹³

One way to assess the relative association between sector membership and school organization is to compare the strength of the relationship between sector and key domains after controlling for other school characteristics. In this report, this is done for selected indicators of each of the six key organizational domains of schools. The sector analysis for each of the organizational domains is done for the following indicators:

- 1) Educational Goals: three variables—whether or not a school holds basic skill enhancement, academic excellence, religious development as their primary educational goal
- 2) Professionalization of Principals: the principal's level of education
- 3) Teacher Compensation: starting teacher salary schedule
- 4) Size of Administration: ratio of school-building administration to 10 teachers
- 5) School-based Control: degree of principal influence over curricular decisions
- 6) Curriculum Emphasis: number of years of mathematics and science required to graduate

The first step of the sector analysis examines the relationship between relevant school characteristics and each indicator of a selected organizational domain. This is carried out in a multiple regression format, which provides information about the association between school

¹³ There are other forms of relationships between variables that the following analysis controls for, such as the classic spurious relationship, which in this case would mean that an organizational domain varies by enrollment size and not sector membership (see Simon 1971).

characteristics and a selected organizational domain in the form of a prediction equation.¹⁴ For example, this technique indicates the degree to which one could accurately predict a school's starting teacher salary knowing other characteristics about the school such as its enrollment size, location, type of community served, and so forth. The more accurate the statistical prediction, the stronger is the association between characteristics and salary level.

The second step adds in sector membership in the same fashion. An assessment is then made as to how the addition of sector membership improves the prediction of organizational domains beyond what is gained from knowing the other characteristics of a school. The more that sector information adds, controlling for other school characteristics, the more central is the relationship between sector and school organization. In each case, sector information includes public school and the seven private school types. The other relevant school characteristics, against which sector membership is compared, are: enrollment size; student/teacher ratio; school type (secondary, combined); community type (urban, suburban, and rural); geographical region (Northeast, Midwest, West, and South); size of minority enrollment; proportion of students applying to college; single-sex or coeducation status; parent influence; and degree of volunteer support from the community.¹⁵

Table 8 presents summary statistics for equations predicting each selected organizational domain from school characteristics and school sector. The first column shows the variation between schools on the organizational domain explained (on a scale of 0 to 100) using just school characteristics, and the second column shows the amount of variation explained when school sector membership is added.¹⁶ The third column presents the improvement in explaining variation between schools on each indicator of an organizational domain (i.e., "reduction in erroneous predictions") when school sector membership is added to the analysis.

The indicators are ordered in table 8 from those that are most related to sector membership to those that are least influenced. (Full information about each equation can be seen in Appendices B and D.) Whether or not a school has religious development as its primary goal is almost completely a function of its sector. No public schools can have this as a goal, nor would nonreligious private schools. Contrasted to this, however, is the relatively minor relative association between sector membership and whether or not a school has either basic skills or academic excellence as its primary goal.

Starting teacher salaries are also sharply defined by sector membership. A school's size, location, community, student body make-up, and so forth explains nearly 40 percent of school-

¹⁴ OLS estimates of regression parameters are used in each case. For ease of interpretation, OLS is used for the three categorical dependent variables as well; logit estimates of these three equations showed very similar substantive results.

¹⁵ The following categorical factors are measured as contrast variables with the comparison category in parenthesis: school sector (public); school type (combined); community type (rural); geographical region (South); sex composition (coeducational).

¹⁶ These are R^2 s that estimate the amount of variation for each domain explained by each set of independent variables.

to-school variation in the salaries of starting secondary school teachers, but when sector membership is added, over 60 percent of variation is explained, an improvement of 37 percent. This indicates that after controlling for the other school factors, sector membership is strongly related to starting teacher salary. For example, in table B.5 (Appendix B), the coefficients (effect are in dollars) for sector membership show that each private school type pays teachers less than public schools even after controlling for the other factors. This ranges from almost \$8,000, on average, less for conservative Christian schools to just over \$2,000, on average, less in regular nonsectarian schools.

Although not as large as for the religious development goal and teacher compensation, sector membership does add modestly to predicting a school principal's education level beyond other school characteristics.

The results for the other three organizational domains tell a different story for several reasons. First, the school characteristics are less associated with the other organizational characteristics in general. For example, only 14 percent and 9 percent of all of the variation between schools in administrative/teacher ratios and level of principal influence over curriculum, respectively, is explained by the other school characteristics. Second, adding sector membership to the equation improves explanation by only a small amount across administration size, school-based control and curricular emphasis. Sector membership adds from 1 to 5 percent to the prediction of these indicators. Although sector is related to each domain, it is not nearly as strong an association as with the other three domains.¹⁷

¹⁷ The individual coefficients (displayed in tables B.1 to B.9, Appendix B) show the actual size of any association between sector membership and organizational domain. For example, on average all types of private schools, except for the three types of Catholic schools, have larger relative administrative ratios than public schools. For instance, even after controlling for all other factors in the equation, conservative Christian schools add 1.2 to their ratio beyond the average public school.

Table 8— Comparing association between six organizational domains and school sector versus other school characteristics listed in order of largest sector influence (OLS Estimates)¹

	Percent Variation Explained by:		Proportion reduction in between-school variation on domains after school sector is included
	School characteristics ²	School characteristics plus school sector ³	
<i>Organizational domains</i>			
Educational goals – (religious development or not) ⁴	2	52	40.2 (F=305.1; 7, 3165 d.f.)***
Starting salary	39	62	37.3 (F=253.4; 7, 2983 d.f.)***
Principal education	8	17	7.1 (F=34.6; 7, 3159 d.f.)***
Educational goals – (basic skill or not)	6	9	5.3 (F=25.2; 7, 3165 d.f.)***
Principal influence over curriculum	9	14	5.1 (F=24.2; 7, 3165 d.f.)***
Administrator/teacher ratio	14	20	4.1 (F=19.3; 7, 3165 d.f.)***
Curricular emphasis – (# years math requirement)	18	19	2.1 (F=9.0; 7, 2881 d.f.)**
Educational goals – (academic excellence or not)	7	9	1.3 (F=5.8; 7, 3165 d.f.)**
Curricular emphasis – (# years science required)	7	9	1.0 (F=4.2; 7, 2881 d.f.)**

** $\alpha < 0.01$

*** $\alpha < 0.001$

¹ See Appendix B for variable definitions, actual estimated coefficients for each equation, and formulas used for calculating percent improvement in variation explained (i.e., "reduction in errors").

² Variables included: school enrollment, student/teacher ratio, secondary school (vs. combined school), urbanicity (urban and suburban versus rural), region (Northeast, Midwest, and West versus South), parental influence, volunteer service, percent minority student, single-sexed schools vs. co-ed schools, and college application rate.

³ Includes all variables listed in footnote 2 plus private school types (parochial, diocesan, private order; conservative Christian, affiliated, and unaffiliated other religious; nonsectarian regular school versus public).

⁴ All public schools were coded as not having religious development as a primary goal.

CONCLUSION

There are organizational differences between public and private secondary schools, but the differences are not always uniform and pervasive. School sector is not a *simple organizational fault line* running through the nation's schools. There is considerable organizational variation among different types of private secondary schools and some significant overlap in the distributions of organizational features among public and certain types of private schools. It is not just that secondary schools are organizationally diverse—they clearly are—but the distribution of organizational features across sectors is often more complex than a simple public versus private difference.

For example, the patterns reported by principals about their school's most important educational goal reflect this complexity. There is a clear sector difference in that religious development of students is the most important goal among many private schools, but at the same time not all religiously sponsored schools claim religious development as their most important goal. A substantial proportion of Catholic and unaffiliated religious private secondary schools report that academic excellence is their chief goal. Similarly, although most public schools see improving basic academic skills as their chief goal, a substantial proportion of public schools hold academic excellence as their chief goal. And the proportion of public schools with this as their central goal is similar to the proportion among the three types of Catholic schools.

Sector patterns in principal professionalization and the relative size of administrative staff illustrate the organizational diversity of the nation's schools. There is a significant difference between public and private schools in the average level of principal education, but there are also marked differences among types of private schools. Similarly, there is a sector difference in the size of administrative staff within secondary schools, but this is not uniform across all private school types. Like educational goals, some private school types tend to look more like the public sector than other private school types.

The analysis also shows that there can be very little sector difference in some organizational domains. For example, except for foreign language requirements, the average course requirements for graduation vary little across sectors. At the same time, there can be large sector differences. Compensation for teachers and governance environment surrounding educational decisions are two domains with the clearest and most consistent sector differences. But even here, there is more to the picture than a simple public versus private difference. For example, although all types of private schools tend to pay new and experienced teachers less than public schools, there are wider ranges in starting salaries among private schools than public schools. And although the principal serves as a key organizational decisionmaker more often in the private sector, so do the principals in a sizable portion of public secondary schools.

The analysis of the extent to which sector membership explains variation between schools in several key organizational domains, after controlling for other school characteristics, points to the same overall conclusion that sector is not always a simple organizational fault line. Although sector membership explains a substantial amount of between-school variation for one type of primary educational goals and teacher compensation, even after holding many other school characteristics constant, it explains relatively little of the between-school variation for types of

goals, relative administration size, and decisionmaking power of principals. In terms of principal professionalization, sector membership is only modestly related after controlling for other characteristics. For some organizational qualities, sector membership is a major organizational divide, while for others it is only a minor one among many other factors.

Throughout its history, the American educational system has had numerous and diverse sponsorship of schools. Because schooling in the United States has been closely tied to local communities, many groups of Americans produced their own schooling. Religious and nonreligious groups alike have been able to form schools for their own interests and communities just as the more than 17,000 public school districts provide schooling for their local communities. As a result, although the private secondary sector is not particularly large in terms of overall enrollment, the fact that over one out of four secondary schools is private makes it a substantial organizational sector.

Contrary to some of the images emerging from the school reform and school sector debates, diversity in school sponsorship does not necessarily mean that there are uniformly similar organizations of secondary schools along either side of the public and private divide. The analysis here of six central organizational domains shaping secondary schools shows a complex picture of sector differences. Simple differences between public and private sectors are at times overshadowed by differences among private schools themselves. Similarly, there is often considerable overlap between parts of the public sector and parts of the private sector. And in other cases basic organizational features of schools in the United States, such as curricular emphasis, are relatively similar.

Awareness of these organizational patterns among secondary schools is helpful in providing a context to consider studies that compare public and private schools on various secondary school outcomes. Since outcome research has been particularly provocative for reform efforts aimed towards the public sector, a broader understanding of the organizational nature of the nation's secondary schools will inform both policy research and reform efforts undertaken to improve education for all students.

REFERENCES

- Adams, J.S. and Rosenbaum, W.B. 1962. "The relationship of worker productivity to cognitive dissonance about wage inequities." *Journal of Applied Psychology* 46: 161-64.
- Alves, M. and Willie, C. 1987. "Controlled choice assignment: A new and more effective approach to school desegregation." *Urban Review* 19(2): 67-87.
- Baker, D. 1992. "The politics of American Catholic school expansion, 1870-1930." In Fuller, B. and Robinson, R. (eds.) *The Political Construction of Education*. New York: Praeger.
- Ballou, D. and Podgursky, M. 1995. "Teacher pay and teacher quality." Manuscript for W. E. Upjohn Institute for Employment Research.
- Benavot, A., Yun-Kyung, C., Kamens, D., Meyer, J., and Suk-Ying, W. 1991. "Knowledge for the masses: World models and national curricula, 1920-1986." *American Sociological Review* 56: 85-100.
- Benson, P. and McMillen, M. 1991. *Private Schools in the United States: A Statistical Profile, with Comparisons to Public Schools*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 91-054).
- Boyd, W.L. and Walberg, H. (eds.). 1990. *Choice in Education: Potential and Problems*. Berkeley, CA: McCutchan Pub. Corp.
- Bryk, A., Lee, V., and Holland, P. 1993. *Catholic Schools and the Common Good*. Cambridge, MA: Harvard University Press.
- Chambers, J. 1988. "Patterns of compensation of public and private school teachers." In James, J. and Levine, H. (eds.) *Comparing Public and Private Schools VI*. New York: The Falmer Press.
- Chambers, J. 1995. *Public School Teacher Cost Differences Across the United States*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 95-758).
- Chambers, J. 1996. *The Patterns of Teacher Compensation*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 95-829).
- Chubb, J. and Moe, T. 1990. *Politics, Markets, and America's Schools*. Washington, DC: The Brookings Institution.
- Cohen, D. 1990. "Governance and instruction: The promise of decentralization and choice." In Clune, W. and Witte, J. (eds.) *Choice and Control in American Education VI*. London: The Falmer Press.

References

- Coleman, J., Hoffer, T., and Kilgore, S. 1982. *High School Achievement: Public, Catholic and Private Schools Compared*. New York: Basic Books.
- Cookson, P. and Lucks, C. 1995. "School choice in New York City: Preliminary observations." In Hallinan, M. (ed.) *Restructuring Schools: Promising Practices and Policies*. New York: Plenum Press.
- Cooper, B. 1988. "The changing universe of U.S. private schools." In James, T. and Levine, H. (eds.) *Comparing Public and Private Schools VI*. New York: The Falmer Press.
- Cyert, R. and March, J. 1963. *A Behavioral Theory of the Firm*. Englewood Cliff, NJ: Prentice-Hall.
- Freidson, E. 1973. *The Professions and Their Prospects*. Beverly Hills, CA: Sage Publishing.
- Gittell, M., Berube, M.R., Gottfried, F., Guttentag, M., and Spier, A. 1972. *Local Control in Education: Three Demonstration School Districts in New York City*. New York: Praeger Publishers.
- Greeley, A. 1982. *Catholic High Schools and Minority Students*. New Brunswick: Transition Books.
- Hannan, M. and Carroll, G. 1992. *Dynamics of Organizational Populations: Density, Legitimation, and Competition*. New York: Oxford University Press.
- Hannaway, J. and Abramowitz, S. 1985. "Public and private schools: Are they really different?" In Austin, G. and Garber, H. (eds.) *Research on Exemplary Schools*. Orlando: Academic Press.
- Hannaway, J. 1989. *Managers Managing: The Workings of an Administrative System*. New York: Oxford University Press.
- James, E. 1987. "The political economy of private education in developed and developing countries." EDT Series #71. Washington, DC: The World Bank.
- James, H. and Levine, H. 1988. *Comparing Public and Private Schools VI and V2*. New York: The Falmer Press.
- Jencks C. 1985. "How much do high school students learn?" *Sociology of Education* 58(2): 128-135.
- Jepperson, R. 1991. "Institutions, institutional effects and institutionalism." In Powell, W. and DiMaggio, P. (eds.) *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press.

- Kane, P.R. and Mason, J.B. 1992. "The role of administrators." In Kane, P.R. (ed.) *Independent Schools, Independent Thinkers*. San Francisco, CA: Jossey-Bass.
- Malen, B. and Ogawa, R.T. 1988. "Professional patron influence on site-based governance councils: A confronting case study." *Educational Evaluation and Policy Analysis* 10: 251-70.
- March, J. and Olsen, J. 1976. *Ambiguity and Choices in Organizations*. Bergen: Universitetsforlaget.
- March, J. and Simon, H. 1958. *Organizations*. New York: Wiley and Sons.
- McLaughlin, D., O'Donnell, C., and Ries, L. 1995. *Private Schools in the United States: A Statistical Profile, 1990-91*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 95-330).
- McMillen, M. 1988. *Secondary School Teachers' Opinions: Public and Private Schools*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES CS88-102).
- McMillen, M. and Benson, P. 1991. *Diversity of Private Schools*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 92-082).
- Meyer, J. and Rowan, B. 1977. "Institutionalized organizations: Formal structure as myth and ceremony." *American Sociological Review* 83: 340-63.
- Ramirez, F. and Ventresca, M. 1992. "Building the institution of mass schooling: Isomorphism in the modern world." In Fuller, B. and Robinson, R. (eds.) *The Political Construction of Education*. New York: Praeger.
- Rogers, D. and Chung, N.H. 1983. *110 Livingston Street Revisited: Decentralization in Action*. New York: New York University Press.
- Scott, W. 1981. *Organizations: Rational, Natural and Open System*. Englewood Cliffs, NJ: Prentice-Hall.
- Scott, W. and Meyer, J. 1988. "Environmental linkages and organizational complexity: Public and private schools." In James, J. and Levine, H. (eds.) *Comparing Public and Private Schools VI*. New York: The Falmer Press.
- Shoemaker, J. and Fraser, H. 1981. "What principals can do: Some implications from studies of effective schooling." *Phi Delta Kappan* 63: 178-82.
- Simon, H. 1964. "On the concept of organizational goal." *Administrative Science Quarterly* 9: 1-22.

References

- Simon, H. 1971. "Spurious correlations: A causal interpretation." In H. Blalock (ed.) *Causal Models in the Social Sciences*. Chicago: Aldine Publishing Co.
- Talbert, J. 1988. "Conditions of public and private school organizations and notions of effective schools." In James, T. and Levine, H. (eds.) *Comparing Public and Private Schools VI*. New York: The Falmer Press.
- U.S. Bureau of Census. 1993. Public Education Finance: 1990-91. Series GF-91-10. Washington, DC: U.S. Government Printing Office.
- Weick, K. 1976. "Educational organizations as loosely coupled systems." *Administrative Science Quarterly* 21: 1-19.

APPENDIX A: ADDITIONAL INFORMATION ABOUT EDUCATIONAL GOALS

Table A.1— Percentage of private secondary school principals reporting the second most important educational goals among those who reported religious development as the most important goal

	Basic literacy skills	Academic excellence	Vocational skills	Discipline	Personal growth	Human relations skills	Specific moral values
Total private schools ¹	22.7	40.0	0.6	10.4	10.7	0.1	15.5
Catholic							
Parochial	5.6	61.0	0.0	0.0	15.6	0.0	17.8
Diocesan	2.3	69.8	0.0	4.2	15.9	0.0	7.9
Private order	6.7	50.3	0.0	6.9	26.9	0.0	9.8
Other Religious							
Conservative Christian	27.0	37.4	0.0	16.2	6.6	0.0	12.8
Affiliated	26.4	38.3	0.0	4.2	11.9	0.6	18.6
Unaffiliated	27.5	19.7	5.5	5.8	11.3	0.0	30.2

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

APPENDIX B: DETAILS OF THE MULTIPLE REGRESSION ANALYSIS

School Characteristics

- **Total enrollment K-12 plus ungraded:** total student enrollment of the school
- **Student/teacher ratio:** ratio of the total number of students divided by the total number of teachers in the school
- **Secondary school:** a dichotomous variable where 0 = combined and 1 = secondary
- **Urban area:** a dichotomous variable where 0 = No and 1 = Yes, Urban
- **Suburban area:** a dichotomous variable where 0 = No and 1 = Yes, suburban
- **Northeast region:** a dichotomous variable for region of the country where the school resides where 0 = No and 1 = Yes, Northeast region
- **Midwest region:** a dichotomous variable for region of the country where the school resides where 0 = No and 1 = Yes, Midwest region
- **West region:** a dichotomous variable for region of the country where the school resides where 0 = No and 1 = Yes, West region
- **Parental influence:** mean of principal's rating of parental influence in curriculum, discipline, and hiring policy (Scale of 1 for None to 7 for Great Deal)
- **Do you have any volunteers?:** a dichotomous variable where 0 = No and 1 = Yes
- **% minority enrollment:** percentage of student enrollment that is minority
- **All male school:** a dichotomous variable where 0 = Not all male enrollment and 1 = All male enrollment
- **All female school:** a dichotomous variable where 0 = Not all female enrollment and 1 = All female enrollment
- **College application rate:** percentage of students that apply to college

For private schools:

- **Parochial Catholic:** a dichotomous variable where 0 = No and 1 = Yes, Parochial Catholic
- **Diocesan Catholic:** a dichotomous variable where 0 = No and 1 = Yes, Diocesan Catholic
- **Private Order Catholic:** a dichotomous variable where 0 = No and 1 = Yes, Private Order Catholic
- **Conservative Christian:** a dichotomous variable where 0 = No and 1 = Yes, Conservative Christian
- **Affiliated Christian:** a dichotomous variable where 0 = No and 1 = Yes, Affiliated Christian
- **Unaffiliated Christian:** a dichotomous variable where 0 = No and 1 = Yes, Unaffiliated Christian
- **Nonsectarian Regular:** a dichotomous variable where 0 = No and 1 = Yes, Nonsectarian Regular

Appendix B

Appendix B.1— OLS estimates of basic skill as the most important educational goal regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ¹	(se)	(b) ¹	(se)
Organizational size				
School enrollment	#	#	##	#
Student/teacher ratio	#	#	#	#
Secondary schools	0.03	0.03	-0.05	0.03
Community				
Urban	0.06*	0.03	0.06*	0.03
Suburban	0.05	0.03	0.05	0.03
Northeast	-0.11*	0.03	-0.11*	0.03
Midwest	-0.02	0.04	-0.02	0.04
West	0.02	0.04	0.02	0.03
Parent influence	0.01	0.01	#	0.01
Volunteer service	-0.08*	0.02	-0.05*	0.02
Student composition				
% minority	#	#	#	#
Male schools	-0.19*	0.07	0.04	0.09
Female schools	-0.25*	0.06	-0.05	0.09
% applying to college	##	#	#	#
Sector Membership				
Parochial			-0.25	0.14
Diocesan			-0.27	0.10
Private order			-0.41*	0.08
Conservative Christian			-0.41*	0.07
Affiliated			-0.41*	0.05
Unaffiliated			-0.32*	0.10
Regular			-0.24*	0.06
Intercept	0.45*		0.51*	
R ²	4%		9%	
n	3186		3186	

The absolute value of the entry is <.005, but >0.

* Significant at $\alpha < .05$.

¹ unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

Appendix B.2— OLS estimates of academic excellence as the most important educational goal regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ¹	(se)	(b) ¹	(se)
<u>Organizational size</u>				
School enrollment	#*	#	#*	#
Student/teacher ratio	#*	#	-0.01*	#
Secondary schools	0.04	0.03	0.04	0.02
<u>Community</u>				
Urban	#	0.03	#	0.02
Suburban	-0.01	0.03	-0.01	0.02
Northeast	#	0.03	0.01	0.03
Midwest	-0.12*	0.03	-0.10*	0.02
West	-0.12*	0.03	-0.12*	0.02
Parent influence	0.01	0.01	0.01	0.01
Volunteer service	0.03	0.02	0.04	0.01
<u>Student composition</u>				
% minority	#	#	#	#
Male schools	0.09	0.09	0.05	0.08
Female schools	-0.01	0.09	-0.04	0.06
% applying to college	#*	#	#*	#
<u>Sector Membership</u>				
Parochial			-0.09	0.10
Diocesan			-0.16*	0.06
Private order			0.01	0.07
Conservative Christian			-0.17*	0.05
Affiliated			-0.06	0.04
Unaffiliated			0.12	0.07
Regular			0.28*	0.06
Intercept	0.09*		0.09*	
R ²	7%		8%	
n	3186		3186	

The absolute value of the entry is <.005, but >0

* Significant at $\alpha < .05$.

¹ unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

Appendix B.3— OLS estimates of religious development as the most important educational goal regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ¹	(se)	(b) ¹	(se)
<u>Organizational size</u>				
School enrollment	**	#	**	#
Student/ teacher ratio	0.01*	#	**	#
Secondary schools	-0.10*	0.03	0.01	0.01
<u>Community</u>				
Urban	#	0.02	0.02	0.01
Suburban	#	0.02	0.02	0.01
Northeast	0.03	0.02	0.02	0.01
Midwest	0.06*	0.02	0.04*	0.02
West	0.01	0.02	0.01	0.01
Parent influence	-0.01	0.01	#	0.01
Volunteer service	0.07*	0.02	0.02	0.01
<u>Student composition</u>				
% minority	#	#	#	#
Male schools	0.14	0.07	0.07	0.09
Female schools	0.07	0.08	-0.11	0.07
% applying to college	**	#	**	#
<u>Sector Membership</u>				
Parochial			0.46*	0.10
Diocesan			0.49*	0.11
Private order			0.42*	0.10
Conservative Christian			0.76*	0.06
Affiliated			0.51*	0.07
Unaffiliated			0.33*	0.11
Regular			0.05*	0.02
Intercept	0.09*		-0.02*	
R ²	19%		52%	
n	3186		3186	

The absolute value of the entry is <.005, but >0

* Significant at $\alpha < .05$.

¹ unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

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Appendix B.4— OLS estimates of principal education regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) [†]	(se)	(b) [†]	(se)
<u>Organizational size</u>				
School enrollment	#*	#	#*	#
Student/ teacher ratio	0.01	#	0.01	#
Secondary schools	0.06	0.04	-0.03	0.04
<u>Community</u>				
Urban	0.04	0.04	#	0.04
Suburban	-0.01	0.04	-0.02	0.04
Northeast	-0.01	0.04	-0.02	0.04
Midwest	-0.05	0.04	-0.05	0.04
West	-0.13*	0.04	-0.13*	0.03
Parent influence	0.02	0.01	0.02	0.01
Volunteer service	0.01	0.03	0.01	0.03
<u>Student composition</u>				
% minority	#	#	#	#
Male schools	0.08	0.10	0.13	0.12
Female schools	0.01	0.08	-0.04	0.08
% applying to college	-0.03	#	#	#
<u>Sector Membership</u>				
Parochial			0.05	0.13
Diocesan			-0.04	0.12
Private order			-0.01	0.11
Conservative Christian			-0.51*	0.13
Affiliated			-0.19*	0.09
Unaffiliated			-0.27	0.17
Regular			-0.17*	0.07
Intercept	2.05*		2.22*	
R ²	8%		14%	
n	3180		3180	

The absolute value of the entry is <.005, but >0

* Significant at $\alpha < .05$.[†] unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

Appendix B.5— OLS estimates of salary schedules regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ¹	(se)	(b) ¹	(se)
Organizational size				
School enrollment	2.31*	0.16	1.75*	0.14
Student/ teacher ratio	-23.10	24.94	-5.48	22.35
Secondary schools	865.66*	367.39	-525.66*	192.79
Community				
Urban	124.84	166.64	-26.48	133.04
Suburban	-96.51	243.51	-228.74	234.92
Northeast	2234.03*	238.21	2185.33*	207.89
Midwest	185.32	200.53	243.22	169.20
West	659.64*	323.01	632.14*	299.99
Parent influence	71.16	85.59	15.21	70.16
Volunteer service	-453.06*	192.15	-43.57	141.73
Student composition				
% minority	22.92*	3.86	23.90*	2.90
Male schools	-2703.99*	422.86	-832.21	1143.17
Female schools	-1322.40*	598.76	-204.78	475.41
% applying to college	-22.68*	6.39	1.10	3.43
Sector Membership				
Parochial			-3586.31*	561.04
Diocesan			-3013.68*	544.14
Private order			-2579.05*	712.02
Conservative Christian			-7579.25*	577.96
Affiliated			-3136.93*	572.42
Unaffiliated			-6199.67*	1173.76
Regular			-2073.17*	667.34
Intercept	15792*		18140*	
R ²	39%		62%	
n	3004		3004	

* Significant at $\alpha < .05$.¹ unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

Appendix B.6— OLS estimates of administrator/teacher ratio regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ¹	(se)	(b) ¹	(se)
Organizational size				
School enrollment	**	#	**	#
Student/ teacher ratio	0.02	0.01	0.02*	0.01
Secondary schools	-0.20	0.11	0.05	0.08
Community				
Urban	-0.04	0.09	-0.02	0.09
Suburban	-0.05	0.08	-0.02	0.08
Northeast	0.34*	0.08	0.37*	0.07
Midwest	0.19*	0.09	0.21*	0.09
West	0.31*	0.11	0.30*	0.11
Parent influence	0.03	0.04	0.04	0.04
Volunteer service	0.11	0.08	0.04	0.08
Student composition				
% minority	**	#	**	#
Male schools	1.20*	0.43	1.02*	0.47
Female schools	1.36*	0.48	1.42*	0.70
% applying to college	#	#	#	#
Sector Membership				
Parochial			0.11	0.26
Diocesan			0.02	0.22
Private order			-0.10	0.50
Conservative Christian			1.24*	0.43
Affiliated			1.21*	0.21
Unaffiliated			0.76*	0.29
Regular			0.71*	0.27
Intercept	1.76*		1.40*	
R ²	14%		18%	
n	3186		3186	

The absolute value of the entry is <.005, but >0.

* Significant at $\alpha < .05$.¹ unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (School Questionnaire).

Appendix B.7— OLS estimates of principal influence on curriculum regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ¹	(se)	(b) ¹	(se)
<u>Organizational size</u>				
School enrollment	#*	#	#	#
Student/teacher ratio	0.01	0.01	#	0.01
Secondary schools	-0.05	0.08	0.17*	0.08
<u>Community</u>				
Urban	0.06	0.09	0.09	0.09
Suburban	0.16	0.09	0.19*	0.09
Northeast	0.31*	0.09	0.30*	0.09
Midwest	0.28*	0.07	0.29*	0.07
West	0.24*	0.09	0.24*	0.09
Parent influence	0.21*	0.04	0.23*	0.04
Volunteer service	0.01	0.06	-0.09	0.06
<u>Student composition</u>				
% minority	#	#	#	#
Male schools	0.60*	0.22	-0.08	0.24
Female schools	0.40*	0.16	-0.17	0.16
% applying to college	0.01*	#	#	#
<u>Sector Membership</u>				
Parochial			0.76*	0.22
Diocesan			0.96*	0.22
Private order			1.18*	0.15
Conservative Christian			1.06*	0.22
Affiliated			0.98*	0.12
Unaffiliated			1.32*	0.16
Regular			0.91*	0.16
Intercept	3.99*		3.81*	
R ²	9%		13%	
n	3186		3186	

The absolute value of the entry is <.005, but >0.

* Significant at $\alpha < .05$.¹ unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Administrator Questionnaire).

Appendix B.8— OLS estimates of math graduation requirement regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ^a	(se)	(b) ^a	(se)
<u>Organizational size</u>				
School enrollment	#	#	#	#
Student/ teacher ratio	-0.01*	#	-0.01*	0.00
Secondary schools	-0.16*	0.04	-0.09*	0.04
<u>Community</u>				
Urban	#	0.04	0.06	0.04
Suburban	0.04	0.03	0.05	0.03
Northeast	-0.05	0.05	-0.04	0.05
Midwest	-0.40*	0.04	-0.40*	0.04
West	-0.30*	0.04	-0.30*	0.03
Parent influence	-0.01	0.02	-0.02	0.02
Volunteer service	0.03	0.03	0.01	0.02
<u>Student composition</u>				
% minority	**	#	**	#
Male schools	0.45*	0.10	0.31*	0.12
Female schools	0.05	0.08	-0.16	0.11
% applying to college	**	#	#	#
<u>Sector Membership</u>				
Parochial			0.29	0.23
Diocesan			0.19	0.11
Private order			0.30	0.15
Conservative Christian			0.36	0.09
Affiliated			0.09	0.10
Unaffiliated			0.24	0.17
Regular			0.44	0.09
Intercept	2.96*		2.93*	
R ²	17%		19%	
n	2902		2902	

The absolute value of the entry is <.005, but >0.

* Significant at $\alpha < .05$.^a unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (School Questionnaire).

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Appendix B.9— OLS estimates of science graduation requirement regressed on sector membership and other school factors

	Model 1		Model 2	
	(b) ¹	(se)	(b) ¹	(se)
<u>Organizational size</u>				
School enrollment	**	#	#	#
Student/teacher ratio	-0.01	#	-0.01	#
Secondary schools	-0.16*	0.05	-0.11*	0.04
<u>Community</u>				
Urban	-0.01	0.04	-0.01	0.05
Suburban	0.03	0.04	0.03	0.04
Northeast	-0.08	0.05	-0.08	0.05
Midwest	-0.29*	0.05	-0.29*	0.05
West	-0.14*	0.05	-0.13*	0.05
Parent influence	-0.01	0.02	-0.02	0.02
Volunteer service	0.01	0.03	-0.01	0.03
<u>Student composition</u>				
% minority	#	#	#	#
Male schools	0.37*	0.10	0.27	0.14
Female schools	-0.13	0.156	-0.25	0.13
% applying to college	#	#	#	#
<u>Sector Membership</u>				
Parochial			0.30	0.17
Diocesan			0.26*	0.11
Private order			0.23	0.19
Conservative Christian			0.29	0.17
Affiliated			0.11	0.13
Unaffiliated			0.13	0.18
Regular			0.24*	0.11
Intercept	2.40*		2.41*	
R ²	7%		8%	
n	2902		2902	

The absolute value of the entry is <.005, but >0.

* Significant at $\alpha < .05$.¹ unstandardized coefficient

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (School Questionnaire).

APPENDIX C: TABLES OF STANDARD ERRORS

Appendix C.1— Standard errors of percentage of principals reporting the educational goals as the most important in public and private schools, 1990-91

	Basic literacy skills	Academic excellence	Vocational skills	Discipline	Personal growth	Human relations skills	Specific moral values	Religious development
Total public schools	0.9	0.9	0.3	0.7	0.8	0.3	0.2	N/A
Total private schools ¹	1.6	1.5	0.0	1.1	0.7	0.3	1.3	2.3
Private school type ¹								
Catholic								
Parochial	6.2	9.4	0.0	0.0	6.4	#	2.6	9.1
Diocesan	2.4	5.6	0.0	0.9	2.6	#	3.1	6.0
Private order	3.8	5.2	0.0	2.1	4.0	#	2.4	5.9
Other Religious								
Conservative Christian	3.1	3.1	0.0	1.4	0.4	#	3.2	5.4
Affiliated	4.2	3.3	0.0	2.0	2.5	#	0.5	4.9
Unaffiliated	5.5	5.9	0.0	7.9	2.1	#	2.5	7.0
Nonsectarian								
Regular	4.3	5.5	0.3	5.0	3.3	2.5	1.8	0.0

The absolute value of the entry is <.05, but >0.

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (Administrator Questionnaire).

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Appendix C.2— Standard errors of percentage of schools with principals' various educational degree and mean years of experience in public and private schools, 1990-91

	% Bachelor's degree or less	% Master's degree	Beyond Master's and PhD	Mean # of years teaching	Mean # of years as principal
Total public schools	0.3	1.1	1.1	0.1	0.3
Total private schools ¹	2.3	2.1	1.9	0.3	0.3
Private school type ¹					
Catholic					
Parochial	#	8.1	8.1	1.6	1.4
Diocesan	3.0	5.2	4.7	0.7	0.7
Private order	1.7	5.7	6.1	0.6	0.7
Other Religious					
Conservative Christian	6.1	4.7	2.8	0.5	0.6
Affiliated	6.0	5.7	4.5	0.8	0.8
Unaffiliated	8.1	6.6	5.8	0.8	1.0
Nonsectarian					
Regular	3.5	5.6	5.2	0.7	0.9

The absolute value of the entry is $<.05$, but >0 .

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (Administrator Questionnaire).

Appendix C.3.— Standard errors of percentage of schools with principals receiving leadership training in public and private schools, 1990-91¹

	Evaluation and supervision	Management techniques	Administrative internship	No training
Total public schools	0.7	1.0	1.0	0.5
Total private schools ²	3.2	2.6	1.9	2.3
Private school type ²				
Catholic				
Parochial	9.5	9.8	6.6	8.9
Diocesan	6.2	4.9	5.5	5.2
Private order	6.5	6.1	4.4	4.5
Other Religious				
Conservative Christian	5.3	5.6	3.1	3.4
Affiliated	5.8	5.6	3.4	5.8
Unaffiliated	7.6	7.1	6.3	7.5
Nonsectarian				
Regular	5.9	5.5	3.9	4.0

¹ Course work for a degree is not included.

² Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (Administrator Questionnaire).

Appendix C.4— Standard errors of mean annual salary from teacher salary schedule at different career stages in public and private schools, 1990-91

	Normal yearly base salary for a teacher with BA/BS degree and no experience ²		Highest possible step on the salary schedule ³	
	Mean	Difference from the public mean	Mean	Difference from the public mean
Total public schools	64	N/A	141	N/A
Total private schools ¹	225		440	
Private school type ¹				
Catholic				
Parochial	413		1,235	
Diocesan	300		579	
Private order	273		824	
Other Religious				
Conservative Christian	406		729	
Affiliated	536		1,080	
Unaffiliated	791		1,317	
Nonsectarian				
Regular	363		753	

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

² For schools that do not have a salary schedule, the lowest range of base year teacher salaries was used in the calculation.

³ For schools that do not have a salary schedule, the highest range of base year teacher salaries was used in the calculation.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

Appendix C.5— Standard errors of percentage of schools providing selected benefits to teachers in public and private schools, 1990-91

	Medical insurance	Pension contributions	Housing
Total public schools	0.4	1.0	0.3
Total private schools ¹	2.4	2.1	1.4
Private school type ¹			
Catholic			
Parochial	#	10.1	4.5
Diocesan	2.4	4.3	0.9
Private order	2.5	5.9	2.0
Other Religious			
Conservative Christian	5.8	2.5	2.2
Affiliated	5.8	5.6	4.6
Unaffiliated	6.5	6.2	4.4
Nonsectarian			
Regular	4.2	4.0	2.9

The absolute value of the entry is $<.05$, but >0 .

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-91 (Teacher Demand and Shortage Questionnaire for Public School Districts and Private School Questionnaire).

Appendix C.6— Standard errors of mean ratio of administrator and other staff per 10 teachers in public and private schools, 1990-91¹

	Administrative ² staff/Teacher ratio	Teacher aides/ Teacher ratio	Librarian and library aides/ Teacher ratio	Counselor/ Teacher ratio
Total public schools	0.1	0.1	#	#
Total private schools ³	0.3	0.2	#	0.1
Private school type ³				
Catholic				
Parochial	0.1	0.4	0.1	#
Diocesan	0.1	0.0	#	#
Private order	0.1	0.1	#	#
Other Religious				
Conservative Christian	0.5	0.4	0.2	0.1
Affiliated	0.2	0.3	0.1	0.1
Unaffiliated	1.6	0.4	0.1	0.1
Nonsectarian				
Regular	0.3	0.3	0.1	0.1

The absolute value of the entry is $<.05$, but >0 .

¹ Half-time staff and teachers were divided by 2 and added to the full-time staff and teachers.

² Administrative staff include principal(s), assistant principal(s), guidance counselors, vocational counselors, and other professional staff such as curriculum specialists, administrative and business staff, social workers, and health professionals.

³ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (School Questionnaire).

Appendix C.7— Standard errors of mean years of academic instruction required for graduating in secondary schools in the public sector and by private schools, 1990-91

	English	Math	Computer sciences	Social studies	Science	Foreign language
Total public schools	#	#	#	#	#	#
Total private schools ¹	0.1	#	#	0.1	0.1	0.1
Private school type ¹						
Catholic						
Parochial	0.1	0.1	0.2	0.2	0.1	0.2
Diocesan	#	0.1	#	0.1	#	0.1
Private order	#	0.1	0.1	#	0.1	0.1
Other Religious						
Conservative Christian	0.2	0.1	0.1	0.2	0.1	0.1
Affiliated	#	0.1	0.1	0.1	0.1	0.2
Unaffiliated	0.1	0.1	0.1	0.1	0.1	0.2
Nonsectarian						
Regular	0.1	0.1	0.1	0.1	0.1	0.1

The absolute value of the entry is $<.05$, but >0 .

¹ Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (School Questionnaire).

Appendix C.8— Standard errors of percentage of principals reporting group having a great deal of influence over decisions concerning “establishing curriculum” in the public sector and by private schools, 1990-91¹

	School Board	Principal	Teachers
Total public schools	0.9	1.0	1.1
Total private schools ²	2.4	1.5	2.6
Private school type ²			
Catholic			
Parochial	10.4	5.5	9.5
Diocesan	3.5	4.3	5.8
Private order	4.6	3.7	3.5
Other Religious			
Conservative Christian	4.8	3.5	5.5
Affiliated	5.7	5.0	5.6
Unaffiliated	8.2	3.9	7.7
Nonsectarian			
Regular	3.7	3.3	3.8

¹ A great deal of influence is defined as 5 to 6 on a scale ranging from 0 (none) to 6 (a great deal).

² Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (Administrator Questionnaire).

Appendix C.9— Standard errors of percentage of principals reporting group having a great deal of influence over decisions concerning “hiring new full-time teachers” in the public sector and by private schools, 1990-91¹

	School Board	Principal	Teachers
Total public schools	0.8	0.5	0.8
Total private schools ²	2.0	1.5	2.1
Private school type ²			
Catholic			
Parochial	8.4	#	6.4
Diocesan	3.6	2.7	5.3
Private order	3.0	1.1	4.1
Other Religious			
Conservative Christian	5.1	2.6	3.7
Affiliated	4.4	6.3	4.4
Unaffiliated	6.9	3.8	6.9
Nonsectarian			
Regular	3.5	1.6	3.3

The absolute value of the entry is $<.05$, but >0 .

¹ A great deal of influence is defined as 5 to 6 on a scale ranging from 0 (none) to 6 (a great deal).

² Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (Administrator Questionnaire).

Appendix C.10— Standard errors of percentage of principals reporting group having a great deal of influence over decisions concerning “setting discipline policy” in the public sector and by private schools, 1990-91¹

	School Board	Principal	Teachers
Total public schools	1.1	0.7	0.9
Total private schools ²	2.4	1.6	2.8
Private school type ²			
Catholic			
Parochial	10.9	3.1	9.5
Diocesan	5.5	3.0	4.2
Private order	4.8	1.2	3.9
Other Religious			
Conservative Christian	5.0	3.5	6.2
Affiliated	5.3	5.4	5.2
Unaffiliated	7.6	3.4	8.2
Nonsectarian			
Regular	4.9	3.2	4.2

¹ A great deal of influence is defined as 5 to 6 on a scale ranging from 0 (none) to 6 (a great deal).

² Schools classified as Nonsectarian Special Emphasis and Special Education are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1990-1991 (Administrator Questionnaire).

**APPENDIX D: FORMULAE USED TO CALCULATE
COLUMN 3 OF TABLE 8**

Formula 1:

$$r_{Y12}^2 = 1 - \frac{SSE(X_1, X_2)}{SSE(X_2)}$$

where r_{Y12}^2 is the proportionate reduction in the variation of Y (dependent variable) remaining after X_2 is included in the model, and

$SSE(X_1, X_2)$ is the variation in Y when both X_1 and X_2 (independent variables) are included in the model, and

$SSE(X_2)$ is the variation in Y when X_2 is included in the model.

Formula 2:

$$F = \frac{SSE(R) - SSE(F)}{df_R - df_F} \div \frac{SSE(F)}{df_F}$$

where F is the F ratio (Large values of F lead to H_a , and

$SSE(F)$ is the error sum of squares for the full model, and

$SSE(R)$ is the error sum of squares for the reduced model, and

df_F is the degrees of freedom for the full model, and

df_R is the degrees of freedom for the reduced model.

APPENDIX E: TECHNICAL NOTES

The Schools and Staffing Survey (SASS) is a periodical survey for school districts, school administrators, schools, and teachers by the National Center for Education Statistics (NCES) of the U.S. Department of Education. The 1990-91 SASS consisted of four basic separate questionnaires administered during the school year: (1) the Teacher Demand and Shortage Questionnaire for Public School Districts, (2) the School Administrator Questionnaire, (3) the School Questionnaire, and (4) the Teacher Questionnaire. The Teacher Follow-up Survey was conducted a year later to a sample of teachers who participated in the Teacher Questionnaire.

Survey Content

- *The Teacher Demand and Shortage Questionnaire* was administered to public school districts and corresponding information was incorporated to the private school questionnaire. The questionnaire was divided into two sections: enrollment and teaching positions and district policy. The first section obtained information on the number of students, teachers, and librarians; teacher position vacancies; and new hires. The second section gathered information on teacher salary and benefits, incentives and compensation, hiring and retirement policies, and high school graduation requirements. In addition, information on race/ethnicity of students and teachers in the district was also collected. The data derived from this survey permit an estimation of teacher demand and shortage, an evaluation of teacher certification and training, and an assessment of the effect of various policies on teacher demand and supply.
- *The School Administrator Questionnaire* was mailed to both public and private school principals. It obtained information from school principals or headmasters about objective responses such as their education and training, teaching and administration experience, and salary and benefits, as well as subject responses such as school problems and group influence by the State Department of Education, board, principal, teacher, or parent association on decisionmaking. The data derived from this survey allow an examination of principal qualifications and principals' perception of school problems and influence on school policies.
- *The School Questionnaire* was sent to both public and private schools. It gathered information about school characteristics, such as student characteristics, type of the program and services offered, length of school day and school year, and graduation and college application rate. It also collected data on staff patterns, such as current teacher characteristics, new teachers, and teacher vacancies and data on difficulty in hiring teachers in different field. The private school version of the questionnaire also included religious or other affiliation background about the school. These data provide information about student body, teacher experience, source of newly hired teachers, and number of teachers who left the school by teaching field.
- *The School Teacher Questionnaire* was also administered to both public and private school teachers. The two versions of the questionnaires were virtually identical. It asked information about current teaching status; teaching experience; teacher education, training, and certification; teaching assignment and workload; and teacher perceptions and attitudes about teaching, job mobility, and workplace conditions. This information allows for analysis of how these factors affect movement into and out of the teaching profession.

- *The Teacher Follow-up Survey* was sent out a year later to a sample of teachers who participated in the Teacher Questionnaire. One version of the questionnaire was for teachers who were still teaching, and the other version was for those who had left the teaching profession. This survey obtained data about employment and teaching status and possible sources of dissatisfaction with teaching as a profession. It also gathered information on family size and income. The data derived from this survey allow for comparisons of public and private school teacher job satisfaction and movement within and out of the teaching profession.

Copies of these questionnaires can be obtained by writing to:

School and Staffing Survey
National Center for Education Statistics
555 New Jersey Avenue, N.W.
Washington, DC 20208-5651

Sample Selection

SASS was designed to provide national estimates for public and private schools; state estimates for public schools; state elementary, state secondary, and national combined estimates for public schools; association and grade-level estimates for private schools; estimates of change from 1988 to 1991 in school-level characteristics; and national estimates for schools with greater than 25 percent Indian enrollment. The teacher questionnaire was designed to support comparisons between new and experienced teachers. Comparisons between bilingual and nonbilingual teachers are possible at the national level.

The sample for SASS conducted during the 1990-1991 school year included 12,856 schools and administrators, 62,217 teachers, and 5,515 local education agencies. To improve estimates of change between 1988 and 1991, the sample selection process controlled the amount of overlap between the 1988 and 1991 school samples, setting it at 30 percent for public schools and for private schools belonging to associations with high response rates in 1988. The overlap for associations that did not have high response rates was set by a sliding scale, and below a point it was minimized.

Schools were the primary sampling units for SASS. Each selected school received a school questionnaire and an administrator questionnaire. Next, a sample of teachers was selected within each school, and each sampled teacher received a teacher questionnaire. A "Teacher Demand and Shortage" (TDS) questionnaire was sent to the local education agency (LEA) associated with each selected school. Also, an additional sample of public school districts not associated with schools received the TDS questionnaire. The private questionnaire included TDS questions for the school.

Selection of Schools

The sampling frame used for public school selection was the 1988-89 school year Common Core of Data (CCD) file, an annual survey collected by the NCES from all state education agencies. CCD was believed to be the most complete list of public schools available. The list consisted of a total of 83,165 regular public schools, Department of Defense operated military base schools, and nonregular schools such as special education, vocational, and alternative schools.

The public school sample was stratified by type (Bureau of Indian Affairs [BIA] schools, Native American schools [schools with 25 percent or more Native American students], schools in Delaware, Nevada, and West Virginia [where it was necessary to implement a different sampling strategy to ensure that at least one school from each LEA in the state was included], or all other schools), state, and grade level (elementary, secondary, or combined). A total of 9,586 public schools were selected.

The sampling frame for private school was the 1989-90 Private School Survey (PSS), which was based on the 1986 Quality of Education Data (QED) private school list, supplemented by 20 private school association lists provided to the Census Bureau in the spring of 1989. The frame included 22,600 schools from the QED list and 1,586 schools were added from association lists.

To improve private school coverage, an area frame of schools was developed to identify schools not on the list frame. Census field representatives used telephone book and yellow pages and contacted local government offices, chambers of commerce, and religious institutions to compile a list of all private schools in each selected area. They then compared this list with the existing PSS list, and nonmatches were added to the universe as part of the area frame.

The private school sample of 3,270 was stratified by the 18 category school association membership (Military, Catholic, Friends, Episcopal, Hebrew Day, Solomon Schechter, other Jewish, Missouri Synod, Wisconsin Synod, Evangelical Lutheran, other Lutheran, Seven-Day Adventist, Christian Schools International, Association of Christian Schools International, National Association of Private Schools for Exceptional Children, Montessori, National Association of Independent Schools, or all else), grade level, and four census regions (Northeast, Midwest, South, and West).

Selection of LEAs

All LEAs that had at least one school selected for the school sample were included in the LEA sample for the TDS Survey. Each Bureau of Indian Affairs and Department of Defense school was defined to be an LEA. Some LEAs do not have schools, but hire teachers who teach in schools in other LEAs. To ensure representation of these teachers, a sample of 135 LEAs without eligible schools was selected. Only 14 of the 135 were actually in scope (that is, were an operating public school agency that reported hiring teachers). All LEAs in Delaware, Nevada, and West Virginia were included to reduce high standard errors in these states. The total LEA sample was 5,515.

Selection of Teachers

Each selected school was asked to provide a list of their teachers and selected characteristics, such as new (in third year or less of teaching)/experienced, bilingual/English as a Second Language (ESL), race/ethnicity, and field of teaching (general elementary, special education, and all others for elementary level teachers; math science, English, social studies, vocational education, special education, and all others for secondary teachers). This information in a selected SASS school comprised the school teacher frame. Eleven percent of private schools and 5 percent of the public schools did not provide a teacher list. A factor in the teacher weighting system was used to adjust these nonparticipant schools.

Teachers were stratified into one of the five groups in the following hierarchical order for each school: (1) Asian or Pacific Islander teachers, (2) American Indian or Alaska Native teachers, (3) Bilingual teachers, (4) new teachers, and (5) experienced teachers. Then, teachers were sorted by their primary field of teaching.

Within each school and teacher stratum, 56,051 public and 9,166 private school teachers were selected systematically with equal probability. The average number of teachers selected per school were 3.49, 6.98, and 5.23 teachers for public elementary, secondary, and combined schools, and 3.78, 4.72, and 2.83 teachers for private elementary, secondary, and combined schools, respectively.

Data Collection Procedures

The U.S. Bureau of the Census collected SASS data for NCES. Following introductory letters to local school districts, questionnaires were mailed to school districts and administrators in December 1990 and to schools and teachers in January and February 1991. About four or five weeks later, a second questionnaire was sent to each nonrespondent. A telephone follow-up of nonrespondents was conducted between March and June.

Response Rates

The weighted response rates were derived by dividing the sum of the basic weights for the interview cases by the sum of the basic weights for the eligible cases. The basic weight for each sample case was assigned at the time of sampling and is the inverse of the probability of selection. The final weighted questionnaire response rates for public and private sectors were as follows:

	Public	Private
Teacher Demand and Shortage	93.5	--
Administrator	96.7	90.0
School	95.3	83.9
Teacher*	90.3	84.3

-- not applicable

*The response rate for public school teachers does not include the 5 percent of the public schools that did not provide teacher lists, and for private school teachers does not include the 11 percent of the private schools that did not provide teacher lists. The effective response rate for public schools was 85.8 percent and for private schools, 75.9 percent.

Imputation

Values were imputed for questionnaire items that should have been answered but were not by (1) using data from other items on the questionnaire, (2) extracting data from a related component of the SASS (a school record to impute district data, for example), (3) extracting information about the sample case from other sources, such as the Common Core Data (CCD) or Private School Survey (PSS), or (4) extracting data from a respondent with similar characteristics.

Weighting

The sample weighting was developed for three purposes: (1) to take account of the selection probabilities at every state of selection, (2) to minimize biases that may result from unit nonresponse, and (3) to make use of available information from external sources to improve the precision of the sample estimates. The public sector was weighted to produce national and state estimates and the private sector was weighted to produce national and 18-group affiliation estimates.

The basic weight was the inverse of the probability of selection, and was adjusted for a sampling adjustment factor, a nonresponse factor, and a frame ratio adjustment factor.

- The sampling adjustment factor was applied to certain schools and administrators to account for duplicate records, merged schools, or any other circumstance that would affect the school's true probability of selection.
- The nonresponse adjustment factor was used to compensate for schools or administrators eligible for the survey but who were not interviewed, usually because they refuse to respond.
- The frame ratio adjustment factor adjusted for differences between expected and actual sample size.

Standard Errors

Estimates in the tables of this report are based on samples and are subject to sampling variability. Standard errors reported in this report were estimated using a balanced repeated replications procedure that incorporates the design features of this complex sample survey. They are generally higher than standard errors calculated under the assumptions of simple random sampling.

The standard errors provide indication of the accuracy of each estimate. If all possible samples of the same size were surveyed under the same conditions, an interval of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the universe value in approximately 95 percent of the cases. Note, however, that the standard errors do not take into account the effect of biases due to item nonresponse, measurement error, data processing error, or other possible systematic error.

The Bonferroni procedure is used to correct significance tests for multiple contrasts. This method corrects the significance (or alpha) level for the total number of contrasts made with a particular classification variable.

Additional Resources on Schools and Staffing Survey (SASS)

The following SASS data products may be obtained free of charge while supplies last from:

U.S. Department of Education
National Center for Education Statistics
SASS Data Products
555 New Jersey Avenue, NW, Room 422
Washington, DC 20208-5651

Reports

- Out-of-Field Teaching and Educational Equality (NCES 96-040)
- Schools and Staffing in the United States: A Statistical Profile: 1993-94 (NCES 96-124)
- Private School Universe Survey, 1993-94 (NCES 96-143)

Appendix E

- SASS by State, 1993-94 Schools and Staffing Survey: Selected State Results (NCES 96-312)
- Comparing Key Organizational Qualities of American Public and Private Secondary Schools (NCES 96-322)
- Schools and Staffing in the United States: Selected Data for Public and Private Schools, 1993-94 (E.D. Tab, NCES 95-191)
- Private Schools in the United States: A Statistical Profile, 1990-91 (NCES 95-330)
- Teacher Supply in the U.S.: Sources of Newly Hired Teachers in Public and Private Schools, 1988-1991 (NCES 95-348)
- Characteristics of American Indian and Alaska Native Education, Results from the 1990-91 SASS (NCES 95-735)
- Teacher Supply, Teacher Qualifications and Teacher Turnover, Aspects of Teacher Supply and Demand in the U.S., 1990-91 (NCES 95-744)
- The Patterns of Teacher Compensation (NCES 95-829)
- Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey, 1991-92 (E.D. Tab, NCES 94-337)
- SASS by State (NCES 94-343)
- Private School Universe Survey, 1991-92 (NCES 94-350)
- Qualifications of the Public School Teacher Workforce: 1988 and 1991 (NCES 94-665)
- America's Teachers: Profile of a Profession (NCES 93-025)
- Private School Universe Survey, 1989-90 (NCES 93-122)
- Selected Tables on Teacher Supply and Demand (E.D. Tab, NCES 93-141)
- Schools and Staffing in the United States: A Statistical Profile, 1990-91 (NCES 93-146)
- Schools and Staffing in the United States: Selected Data for Public and Private Schools, 1990-91 (E.D. Tab, NCES 93-453)
- Schools and Staffing in the United States: A Statistical Profile, 1987-88 (NCES 92-120)
- Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey, 1988-89 (E.D. Tab, NCES 91-128)

Forthcoming Reports

- Characteristics of American Indian and Alaska Native Education, Results from the 1993-94 SASS
- America's Teachers: Profile of a Profession, 1993-94
- The State of Teaching as a Profession, 1990-91
- The Effects of Professionalization on Teachers: A Multi-Level Analysis, 1990-91
- Time Spent Teaching Core Academic Subjects in Elementary Schools: Comparisons Across Community School, Teacher, and Student Characteristics
- Job Satisfaction Among America's Teachers: Effects of Workplace, Conditions, Background Characteristics, and Teacher Compensation, 1993-94
- A Profile of Administration Policies and Practices for Limited English Proficiency Students: Screening Methods, Teacher Training, and Program Support, 1993-94
- Private Schools in the U.S.: A Statistical Profile, 1993-94
- Sources of Newly Hired Teachers in Public and Private Schools, 1988-94
- Characteristics of Students' Programs: Results from Their Student Records, 1993-94
- Characteristics of Stayers, Movers, and Leavers: Results from the Teacher Followup Survey, 1994-95
- Characteristics of Public School Districts, 1993-94
- School Principals in the United States, 1993-94

Issue Briefs

- Are High School Teachers Teaching Core Subjects Without College Majors or Minors in Those Subjects? (Issue Brief, NCES 96-839)
- Where Do Minority Principals Work? (Issue Brief, NCES 96-840)
- What Academic Programs are Offered Most Frequently in Schools Serving American Indian and Alaska Native Students? (Issue Brief, NCES 96-841)
- How Safe are the Public Schools: What Do Teachers Say? (Issue Brief, NCES 96-842)
- Extended Day Programs in Elementary and Combined Schools (Issue Brief, NCES 96-843)
- What Criteria are Used in Considering Teacher Applicants? (Issue Brief, NCES 96-844)

- Private School Graduation Requirements (Issue Brief, NCES 95-145)
- How Much Time Do Public and Private School Teachers Spend in Their Work? (Issue Brief, NCES 95-709)
- Migration and Attrition of Public and Private School Teachers: 1991-92 (Issue Brief, NCES 95-770)
- Which Types of Schools Have the Highest Teacher Turnover? (Issue Brief, NCES 95-778)
- Libraries/Media Centers in Schools: Are There Sufficient Resources? (Issue Brief, NCES 95-779)
- Who Influences Decisionmaking About School Curriculum: What Do Principals Say? (Issue Brief, NCES 95-780)
- Public and Private School Principals: Are There Too Few Women? (Issue Brief, NCES 94-192)
- Sources of Newly Hired Teachers in Public and Private Schools, 1988-91 (Issue Brief, NCES 94-481)
- What are the Most Serious Problems in Schools? (Issue Brief, NCES 93-149)
- Teacher Salaries—Are They Competitive? (Issue Brief, NCES 93-450)
- Teaching and Administrative Work Experience of Public School Principals (Issue Brief, NCES 93-452)
- Teacher Attrition and Migration (Issue Brief, NCES 92-148)

Video

- Americas Teachers: Profile of a Profession

Methods

- 1993-94 Schools and Staffing Survey: Sample Design and Estimation (Technical Report, NCES 96-089)
- An Exploratory Analysis of Nonrespondents in the 1990-91 Schools and Staffing Survey (NCES 96-338)
- Design Effects and Generalized Variance Functions for the 1990-91 Schools and Staffing Surveys (SASS) Volume I--User's Manual (NCES 95-342I)
- Design Effects and Generalized Variance Functions for the 1990-91 Schools and Staffing Surveys (SASS) Volume II--Technical Report (NCES 95-340II)

- Quality Profile for SASS: Aspects of the Quality of Data in the Schools and Staffing Surveys (Technical Report, NCES 94-340)
- 1990-91 Schools and Staffing Survey: Sample Design and Estimation (Technical Report, NCES 93-449)
- Modeling Teacher Supply and Demand, with Commentary (Research and Development Report, NCES 93-461)
- 1987-88 Schools and Staffing Survey: Sample Design and Estimation (Technical Report, NCES 91-127)

CD-ROMs

- Schools and Staffing Survey: 1993-94 Electronic Codebook and Public Use Data
- Schools and Staffing Survey: 1990-91 Electronic Codebook and Public Use Data
- Schools and Staffing Survey, 1987-88 Microdata and Documentation

Questionnaires

- SASS and PSS Questionnaires 1993-1994 (NCES 94-674)
- SASS and TFS Questionnaires 1990-1991
- SASS and TFS Questionnaires 1987-1988

User's Manuals

- 1990-91 Schools and Staffing Survey: Data File User's Manual Volume I: Survey Documentation (NCES 93-144-I)
- 1990-91 Schools and Staffing Survey: Data File User's Manual Volume II: Restricted-Use codebook (NCES 93-144-II)
- 1990-91 Schools and Staffing Survey: Data File User's Manual Volume III: Public-Use codebook (NCES 93-144-III)
- 1990-91 Schools and Staffing Survey: Data File User's Manual Volume IV: Bureau of Indian Affairs (BIA) Restricted-Use Codebooks: Administrator, Schools, and Teachers (NCES 93-144-IV)
- 1991-92 Teacher Followup Survey Data File User's Manual—Public-Use Version (NCES 94-331)
- 1991-92 Teacher Followup Survey Data File User's Manual—Restricted-Use Version (NCES 94-478)

- 1988–89 Teacher Followup Survey Data File User's Manual—Public-Use Version (NCES 92-058)

Forthcoming User's Manuals

- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume I: Survey Documentation
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume II: Restricted-Use Codebook
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume III: Public-Use Codebook
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume IV: Bureau of Indian Affairs (BIA) Restricted-Use Codebooks: Administrator, Schools, and Teachers
- 1993–94 Schools and Staffing Survey, Data File User's Manual Volume V: Restricted-Use Codebook Students' Records

Conference Papers

- Using Classroom Instructional Process Items in National Center for Education Statistics Study To Measure Student Opportunity to Learn: A Progress Report
- Heaven or Hell? The Teaching Environment of Beginning Teachers
- Using Opportunity to Learn Items in Elementary and Secondary National Surveys
- Characteristics of Public and Private School Teachers
- Characteristics of Mathematics and Science Teachers
- Teacher Training, Certification and Assignment
- Teacher Turnover: Patterns of Entry To and Exit from Teaching
- Moonlighting Among Public and Private School Teachers
- Characteristics of Bilingual Education and English as a Second Language Teachers
- Highlights of Minority Data from the Schools and Staffing Survey
- Teacher Incentive Research with SASS
- Teacher Salaries: Comparing States After Adjusting for Teacher Experience and Education
- What are the Characteristics of Principals Identified as Effective by Teachers

- Schools at Risk: Results of the 1987-88 Schools and Staffing Survey
- Destinations of Movers and Leavers: Where Do They Go?
- Teacher Salaries: Comparing States After Adjusting for Teacher Experience and Education
- Classroom Environment and Support of Beginning Teachers: A Test of the "Crucible versus Cradle" Theory of Teacher Induction
- Why do Teachers Leave Teaching? Reasons for Teacher Attrition from the Teacher Followup Survey

NCES Working Papers Related to SASS

WP 94-01 Schools and Staffing Survey (SASS). Papers Presented at the Meetings of the American Statistical Association

Section on Survey Research Methods, August 1992

- a. "The Schools and Staffing Survey: Research Issues"
- b. "The Schools and Staffing Survey: How Reinterview Measures Data Quality"
- c. "Mail Versus Telephone Response in the 1991 Schools and Staffing Surveys"
- d. "Questionnaire Research in the Schools and Staffing Survey: A Cognitive Approach"
- e. "Balance Half-Sample Replication with Aggregation Units"
- f. "Characteristics of Nonrespondents in the Schools and Staffing Surveys' School Sample"
- g. "Improving Reliability and Comparability on NCES Data on Teachers and Other Education Staff"

Establishment Surveys Conference, June 1993

- a. "Sampling Frames at the United States National Center for Education Statistics"
- b. "Monitoring Data Quality in Education Surveys"

Section on Survey Research Methods, August 1993

- a. "Generalization Variance Functions for the Schools and Staffing Surveys"
- b. "A Bootstrap Variance Estimator for the Schools and Staffing Survey"
- c. "Adjusting for Nonresponse Bias of Correlated Items Using Logistic Regression"
- d. "Comparisons of School Locale Setting: Self-Reported Versus Assigned"
- e. "Characteristics of Nonrespondents to the 1990-91 Schools and Staffing Survey"

Social Statistics Section, August 1993

- a. "Implicit Markets for Teacher Quality and School Attributes"
- b. "Who Decides? Principals' and Teachers' Views on Decision-Making"
- c. "Determinants of Pupil-Teacher Ratios at School Sites: Evidence from the Schools and Staffing Survey"

- WP 94-02** Generalized Variance Estimates for Schools and Staffing Survey (SASS)
- WP 94-03** 1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report
- WP 94-04** The Accuracy of Teachers' Self-report on Their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey
- WP 94-06** Six Papers on Teachers from the 1990-91 Schools and Staffing Survey and Other Related Surveys
- a. "The Results of the 1993 Teacher List Validation Study (TLVS)"
 - b. "Designing the Teacher Follow-up Survey (TFS): Issues and Content"
 - c. "Understanding the Supply of Elementary and Secondary Teachers: The Role of the School and Staffing Survey and the Teacher Followup Survey"
 - d. "Teacher Retention/Attrition: Issues for Research"
 - e. "Reflections on a SASS Longitudinal Study"
 - f. "Whither Didst Thou Go? Retention, Reassignment, Migration, and Attrition of Special and General Education Teachers in National Perspective"
- WP 95-01** Schools and Staffing Survey: 1994. Papers Presented at the 1994 Meeting of the American Statistical Association (95-01)

Estimation Issues in School Surveys

- a. "Intersurvey Consistency in School Surveys"
- b. "Estimation Issues Related to the Student Component of the SASS"
- c. "Properties of the Schools and Staffing Survey's Bootstrap Variance Estimator"
- d. "Optimal Periodicity of a Survey: Sampling Error, Data Deterioration, and Cost"

NCES Working Papers Related to SASS (continued)

Response and Coverage Issues in School Surveys

- a. "Some Data Issues in School-Based Surveys"
- b. "The 1991-92 Teacher Follow-up Survey Reinterview and Extensive Reconciliation"
- c. "Improving Coverage in a National Survey of Teachers"
- d. "Improving the Coverage of Private Elementary-Secondary Schools"

Education Research Using the Schools and Staffing Surveys and the National Education Longitudinal Study

- a. "Adding Value to the Value-Added Educational Production Function Specification"
- b. "Teacher Quality in Public and Private Schools"
- c. "Teacher Shortages and Teacher Quality"
- d. "Work Experience, Local Labor Markets, and Dropping out of High School"

- WP 95-02** QED Estimates of the 1990-91 Schools and Staffing Survey: Deriving and Comparing QED School Estimates with CCD Estimates
- WP 95-03** Schools and Staffing Survey: 1990-91 SASS Cross-Questionnaire Analysis
- WP 95-08** CCD Adjustment to the 1990-91 SASS: A Comparison of Estimates
- WP 95-09** The Results of the 1993 Teacher List Validation Study (TLVS)
- WP 95-10** The Results of the 1991-92 Teacher Follow-up Survey (TFS) Reinterview and Extensive Reconciliation
- WP 95-11** Measuring Instruction, Curriculum Content, and Instructional Resources: The Status of Recent Work
- WP 95-15** Classroom Instructional Processes: A Review of Existing Measurement Approaches and Their Applicability for the Teacher Followup Survey
- WP 95-16** Intersurvey Consistency in NCES Private School Surveys
- WP 95-17** Estimates of Expenditures for Private K-12 Schools
- WP 95-18** An Agenda for Research on Teachers and Schools: Revisiting NCES' Schools and Staffing Survey
- WP 96-01** Methodological Issues in the Study of Teachers' Careers: Critical Features of a Truly Longitudinal Study
- WP 96-02** Selected papers presented at the meeting of the 1995 American Statistical Association (96-02)

Overcoming the Bureaucratic Paradigm: Memorial Session in Honor of Roger Herriot

- a. "1995 Roger Herriot Award Presentation"
- b. "Space/Time Variations in Survey Estimates"
- c. "Out of the Box: Again and Again, Roger Herriot at the Census Bureau"

Design and Estimation Issues for School Based Surveys

- a. "Improving the Coverage of Private Elementary-Secondary Schools"
- b. "Improving GLS Estimation in NCES Surveys"
- c. "Optimal Periodicity of a Survey: Alternatives under Cost and Policy Constraint"
- d. "Properties of the Schools and Staffing Survey's Bootstrap Variance Estimator"

Data Quality and Nonresponse in Education Surveys

- a. "Assessing Quality of CCD Data Using a School-Based Sample Survey"
 - b. "Documentation of Nonresponse and Consistency of Data Categorization Across NCES Surveys"
 - c. "Multivariate Modeling of Unit Nonresponse for 1990-91 Schools and Staffing Surveys"
 - d. "Evaluation of Imputation Methods for State Education Finance Data"
 - e. "Variance Estimates Comparison by Statistical Software"
 - f. "Teacher Supply and Demand in the U.S."
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- WP 96-05** Cognitive Research on the Teacher Listing Form for the Schools and Staffing Survey
 - WP 96-06** The Schools and Staffing Survey (SASS) for 1998-99; Design Recommendations to Inform Broad Education Policy
 - WP 96-07** Should SASS Measure Instructional Processes and Teacher Effectiveness?
 - WP 96-09** Making Data Relevant for Policy Discussions: Redesigning the School Administrator Questionnaire for the 1998-99 SASS
 - WP 96-10** 1998-99 Schools and Staffing Survey: Issues Related to Survey Depth
 - WP 96-11** Towards an Organizational Data Base on America's Schools: A Proposal for the Future of SASS, with Comments on School Reform, Governments, and Finance
 - WP 96-12** Predictors of Retention, Transfer, and Attrition of Special and General Education Teachers: Data from the 1989 Teacher Followup Survey
 - WP 96-15** Nested Structures: District Level Data in the SASS
 - WP 96-16** Strategies for Collecting Finance Data from Private Schools

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